C.D. Howe Institute

No Place to Stand?

Abandoning Monetary Targets: An Evaluation

Thomas J. Courchene

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Forward

In October 1975, the Bank of Canada adopted a strategy of monetary gradualism. Its rationale was that inflation could be reduced over a period of time by gradually but firmly reducing the rate of monetary expansion. The cornerstone of this strategy was the Bank's choice of M1, currency and demand deposits at chartered banks, as the monetary aggregate to control.

In an evaluation of the conduct of monetary policy between 1975 and 1980, written by Professor Thomas Courchene and published by the C.D. Howe Institute in 1981, several difficulties in implementing monetary gradualism were described. One of the main difficulties was that the Bank could not successfully define and control the money supply and that it reduced it too slowly.

In mid-1981 monetary gradualism was replaced by monetary abruptness. In September 1982 Governor Bouey discussed the problems of carrying out Canada's policy with the world's central bankers in the Per Jacobsson lecture, which he entitled "Monetary Policy - Finding a Place to Stand." Late in 1982 he announced that the Bank had abandoned monetary targeting.

Two critical questions arise from that decision:

- Does it mean that the Bank has also abandoned its overall goal of reducing inflation to improve the functioning of Canada's economy?
- What alternative strategies should the Bank consider?

By early 1983 it has become apparent that the answer to the second question is far from clear, even

though both questions are of central importance to the Bank. The purpose of the analysis in this volume is to contribute to a clearer understanding of the Bank's decision and to investigate the Bank's options for the future conduct of monetary policy in Canada.

Dr. Courchene concludes that the Bank cannot abandon its anti-inflationary stance. Although monetary gradualism has not worked as well as many analysts had expected, the recent action on the monetary front indicates that inflation can be controlled. Moreover, the costs of reducing inflation are largely behind us.

He also observes that the Bank will have difficulty finding an alternative strategy -- it risks having "no place to stand." To continue effectively its anti-inflation thrust, the Bank will have to recognize that, although it may be able to find an alternative monetary target, it should continue to monitor the growth of money as a guide to policy. That is because, in the conduct of overall policy, the principle must still be observed that no sustained inflation can occur in the absence of an accommodating monetary policy. Dr. Courchene would prefer that the Bank paid attention to a monetary aggregate that incorporated all transaction balances. He also stresses that the Bank should convey the message clearly to the Canadian public that it still considers monetary aggregates to be important to the implementing of monetary policy.

As well, Dr. Courchene assesses alternative indicators of monetary policy as guides to the immediate conduct of policy, such as nominal and real interest rates; the exchange rate; real output or employment; nominal GNP; and appropriate credit conditions. After comparing the merits and drawbacks of each with the erstwhile monetary targeting strategy, he concludes

that an eclectic combination of real-interest-rate and exchange rate targets can be viable. It also appears to be the strategy the Bank is currently using. Dr. Courchene suggests it is a sensible approach as long as the Bank avoids errors and rapid changes that could destabilize the system. And as a check on the possibility that the Bank is generating cumulative error, there is no substitute for falling back on the rates of growth of money, whether they are official targets or not. What must also be remembered is that, in future, monetary policy must be supported in its anti-inflation stance by other public policy as well.

This study has been commissioned as part of the Institute's policy analysis program. It is intended to increase the public's understanding of the options open to the Bank of Canada in conducting monetary policy at a critical juncture in the history of monetary policy -- at a time when these options are under active investigation. It is the Institute's purpose to carry out such timely analyses in order to assist informed debate and sensible policy decisions. This study, written by one of the country's best-qualified analysts of monetary policy, presents conclusions that are his own. They do not necessarily represent those of the Institute or its members.

Wendy Dobson
Executive Director
February 1983

Acknowledgments

Because Governor Bouey's announcement that the Bank of Canada was abandoning M1 targeting occurred in late November of 1982, the time constraints applied to this study were fairly rigid. Accordingly, more than the normal expressions of gratitude are in order, particularly to Charlotte David, who typed the various drafts. Valuable comments were received from John McCallum of the University of Quebec at Montreal; John Grant of Wood, Gundy; and from my Queen's colleagues Douglas Purvis, Richard Lipsey, and David Backus. Wendy Dobson and the staff at the C.D. Howe Institute also provided valuable insights and encouragement. I would also like to express my sincere thanks to my editor, Freya Godard.

More generally, it is a pleasure to thank the Queen's Economics Department for providing such a favorable working environment on my sabbatical from the University of Western Ontario.

The responsibility for the views that follow rests with me.

Thomas J. Courchene
Kingston, February 1983

1

Introduction

In mid-1981, from a position near the top of the 4-8 percent target range, the growth of currency and demand deposits -- M1 plummeted dramatically and has ever since remained below the target range, often significantly so. Commenting on this path of M1 growth in the Bank of Canada's 1981 Annual Report, Governor Gerald K. Bouey noted that, even if one takes into account the substitutions for the monetary aggregate that are being made as a result of technological innovations in banking,

> The movement of M1 over the past few months is well outside the range of what can be explained by changes in total spending and interest rates.... In these circumstances the Bank is, for the time being, not inclined to draw inferences about monetary conditions from the recent pattern of M1 growth beyond those that can be confirmed by other economic and financial indicators.[1]

Later in the year, in the prestigious Per Jacobsson Lecture "Monetary Policy - Finding a Place to Stand," which he was delivering to the world's central bankers, the Governor reiterated this concern:

> There is no question that targets for monetary growth have provided us with help in warding off pressure for more rapid monetary expansion and protection against cumulative error. Even though we have not found that they can substitute for the wide range of judgements that have to be made, they added a useful measure of discipline to the process of determining the course of monetary policy. But monetary targets have not, at least in Canada, provided the clear place to stand for which some had hoped.[2]

Rumors spread quickly through the financial community that the Bank was about to abandon its overall anti-inflation policy. However, even a casual reading of the Per Jacobsson Lecture showed clearly that monetary restraint was still being pursued. But there was indeed more that that afoot, for scarcely two months later, in remarks prepared for the Canadian Club in Toronto, Governor Bouey dropped a bombshell:

> The recorded M1 series is not a useful guide to policy at the present time. In these circumstances I want to make it known that the Bank no longer has a target range for it.[3]

The decision was effective immediately. Accompanying the Bank's December 2, 1982, "Weekly Financial Statistics" was a covering page carrying a direct message to users:

> On November 29 the Governor of the Bank of Canada announced that the Bank no longer has a target for the growth of the monetary aggregate M1. Consequently, information on an M1 target is being discontinued.

Is this the end of an era? In my first book in this series, I described the Governor's decision, in the fall of 1975, to embrace the tenets of monetary gradualism as a "watershed in the annals of Bank of Canada policy."[4] Does the abandonment of the target

range finally mean the end of the Bank's seven-year experiment with the principles of monetarism? Or is it simply a technical adjustment that carries with it few or no implications for the conduct of monetary policy?

The purpose of this study is to assess the ramifications of the Bank of Canada's decision. In particular, the following questions will be addressed:

- What led to the abandoning of monetary targeting?
- What will be the effect on the Bank's policy on inflation?
- What will replace monetary targeting?
- Has the Bank's experience with monetary targeting been a failure?

OUTLINE OF THE STUDY

The analysis will proceed along the following lines. Chapter 3 surveys the major reasons that led the Bank to abandon the M1 targets. The chapter begins with a discussion of the rationale for monetary targeting and how it related to the overall policy adopted in the fall of 1975. The reader's attention is then directed to the multitude of problems that beset the Bank's chosen monetary aggregate. The final section of the chapter examines alternative ways in which the targets might have been preserved, such as adjusting the target range or redefining the monetary aggregate. Although most of the discussion deals with "technical reasons" for abandoning monetary targets, it does address the possibility that there may also have been "theoretical reasons" for the termination of targeting.

The purpose of Chapter 4 is to evaluate the Bank's seven-year experiment with monetary targets. In order

to provide the necessary backdrop, some space is devoted to the role that monetary targets were designed to play within the context of the overall policy. This discussion elaborates on the Bank's own views on the merits of monetary targeting. In the evaluation that follows, a distinction is made between the success (or lack of success) of the Bank's overall policy on the one hand and the success of monetary targeting as the strategy for implementing that policy on the other hand. To anticipate the analysis somewhat, the experience with monetary targeting has not proved to be as successful as many of us, from the vantage point of 1975, had anticipated or indeed as the Bank might have preferred.

With monetary targeting now on the back burner, temporarily at least, the intriguing issue becomes the following: What other monetary policy strategies can the Bank adopt? Chapter 5 focuses on several alternative targeting strategies: on nominal interest rates, real interest rates, exchange rates, nominal income, the "real-side" indicators of output or employment, and appropriate credit conditions. The merits and drawbacks of each alternative strategy are outlined, both in the abstract and in terms of how it compares to targeting on monetary aggregates. In order to breathe more life into this classification, the final section of the chapter discusses how well these alternatives, singly or in combination, can explain recent monetary policy and, what is more important, how well they are likely to perform in the medium term.

A short conclusion, coupled with some personal observations, completes the analysis.

In keeping with the tradition established by these periodic policy updates, some attention will also be given to describing and evaluating the Bank's policy

record and to highlighting other issues and events that have special significance for the conduct of montary policy. However, these aspects of the update will be kept as brief as possible unless they relate directly to the central theme, namely the abandoning of monetary targeting and the implications for the conduct of monetary policy. This analysis appears in Chapter 2.

Borrowing again from tradition, I shall devote the rest of this chapter to a brief summary of the principal conclusions and implications of the analysis that follows.

CONCLUSIONS AND IMPLICATIONS

The 1981-82 Policy Record

- In mid-1981 the Bank of Canada jammed on the monetary brakes. Whether measured by nominal interest rates, real interest rates, or the rate of decrease in the money supply (M1), the ensuing period incorporated the most stringent monetary policy in the Bank's nearly fifty-year history.
- The Bank's initial rationale for allowing short-term rates to soar above 20 percent was to prevent an imminent collapse of the dollar. This downward pressure on the dollar was triggered by the takeovers of foreign companies following the Canadianization initiatives embodied in the National Energy Program. A dramatic decline in the value of the Canadian dollar would have raised import prices and the CPI and dealt a severe blow to the fight against inflation.
- After the initial bout of monetary tightness, the Bank's policy was, in my view, dominated by events south of the border. Reaganomics was working: U.S. wage and price increases were decelerating. As a

result, Canada was finding itself off-side vis-à-vis the Americans in the fight against inflation. Accordingly, monetary policy became even more geared to the external value of the dollar. The discipline imposed on the Americans had to be transferred to Canada, and the obvious way of doing so was to import the U.S. wage and price discipline by tying ourselves to the U.S. dollar. In that sense, the discipline imposed on Canadians was an external discipline. One result of this policy was to generate roughly the same real interest rates in Canada as in the United States. Since our inflation rate was higher than that in the United States, so were our nominal interest rates.o In effect, therefore, Canada abandoned both monetary gradualism and monetary targeting in mid-1981. The Governor's announcement in November 1982 that M1 targeting was being discontinued merely made official what was already occurring.

- It is, of course, possible to view the Bank's new policy as simply a change in strategy: monetary targeting was abandoned and was replaced by monetary abruptness, while the underlying policy goal of generating progressively lower increases in the growth of nominal income, and eventually in the rates of inflation, remained in force as it had been since the advent of the policy in 1975. My own view is that the underlying policy itself also underwent a major shift: monetary targeting aimed at successively reducing the growth of M1 was an integral part of the philosophy of the 1975 policy, and now it is gone.
- One thing is clear from this episode, however. A tight monetary policy can indeed reduce inflation. Whether it needed to involve such a toll on the real side of the economy will be discussed below.

The Rationale for Abandoning Targeting

- The Governor's position was that the M1 targets were abandoned solely for technical reasons.
- The technical problems associated with M1 were such that it was no longer a useful guide for conducting monetary policy. As Chapter 3 explains in some detail, the M1 definition of money was subject to so many technological and financial innovations that increasingly the movements in M1 were no longer a reliable measure of the Bank's monetary policy.
- Chapter 3 points out that there may also have been some theoretical reasons for abandoning the targets.

Evaluating the 1975-82 Period of Monetary Targeting

- Ideally, one of the purposes of monetary targets is to provide both the Bank and the public with information about present and future policy. For the Bank, the growth of M1 in relation to the target would provide a guide to the probable future movements in nominal income. Hence it would also provide information about the changes in interest rates needed at the moment in order to lower the future growth of nominal income and, eventually, the rate of inflation, to their desired levels. For the public, targets were to be a valuable guide to the Bank's future policy. In particular, the knowledge that monetary growth would decelerate would be incorporated into private-sector agents' expectations about future inflation. Assuming that they based their decisions on that information, the real-side costs of unwinding inflation could be reduced.
- Monetary targeting, as a strategy for reducing inflation with minimum cost, failed, in my view, to live

up to its potential for at least four reasons, which reflect different facets of the public's loss of confidence in the policy:

1. The actual monetary path, particularly in the early years of the policy, was far too easy.
2. The Bank's increasing concentration on the exchange rate eroded the influence that monetary targets might have had on the public's expectations about inflation.
3. The choice of an aggregate as narrow as M1 and the method by which the aggregate was controlled left a good deal to be desired. Indeed, the demise of M1 as a useful policy indicator was predicted by earlier volumes in this series.
4. Government policy not only failed to lend sufficient support to the Bank's inflation fight but on more than one occasion undermined the anti-inflation campaign and contributed to the erosion of the public's confidence in monetary targeting.

- To be fair, it must be admitted that, during the 1975-82 period, the Canadian economy was buffeted by a series of exogenous shocks, such as the world energy price increase, and the doubling of U.S. inflation in 1978-80. That made both monetary targeting and the anti-inflation fight incredibly more difficult. Despite some of the problems associated with monetary targeting, it did allow the Bank to withstand the pressures from many quarters to give in to inflation. Moreover, monetary policy is now bringing inflation under control and, until recently, monetary targeting was an essential element in that policy.

What the Future Holds for Monetary Policy

- My own view is that M1 will not be resurrected as a

monetary target. Increasingly, the checkable deposits held by both individuals and corporations are falling outside the purview of M1.

- It would be possible to resurrect targeting with a broader definition of money, for example, one that incorporated the deposits that are used for transactions and that are temporary repositories for transactions balances. Although I would recommend that strategy, it is unlikely that the Bank will adopt it in the near future, in part because to do so would require a significant change in the Bank's operating procedures, particularly in the way it has chosen to control a monetary aggregate.
- Even if monetary targeting were revived, our recent experience has convinced me that it is probably unwise to rely on a single indicator for the conduct of monetary policy. For example, had the Bank of Canada been using real interest rates as a backup indicator to monetary targeting during the 1976-78 period, it would not have embarked on the policy ease that characterized the period.
- Intriguing as it may appear, on the two occasions during the 1975-82 period when the Bank departed from monetary targeting (1978-80 and after mid-1981), the policy became more, not less, restrictive.
- Assuming that monetary targeting is not in the cards, the Bank can adopt several alternative strategies. Targeting on nominal interest rates has serious drawbacks. More acceptable is real-interest-rate targeting, that is, generating a nominal interest rate that is some given percentage, say 3 per cent, above the growth in the CPI. An even more sophisticated procedure would be variable real-interest-rate targeting -- the real interest rate would rise when inflation rises and fall when inflation falls.

Exchange rate targeting can also make good economic sense provided that one expects the U.S. monetary policy to be more appropriate that our own. In the current environment, one view of an exchange rate strategy is that the Bank of Canada has abandoned its own monetary targets and adopted the U.S. monetary targets. These and other alternatives are elaborated in Chapter 5.

- The most likely policy stance is an eclectic strategy, for example, a combination of an exchange rate strategy and a real-interest-rate strategy.
- The challenge for monetary policy in the near future will be to prevent a resurgence of inflationary pressures once the recovery begins in earnest. The best way to ensure that inflation will not be rekindled is to prevent the money supply from expanding too rapidly. Thus, even though there may be no formal monetary targets, the Bank would be well advised to buttress its new strategy by monitoring closely the various monetary aggregates that it publishes. They will provide an invaluable check against cumulative error in any chosen strategy, particularly in those critical periods when exchange rates or real interest rates are likely to generate spurious information. My own hope and, indeed, my expectation is that this is precisely what the Bank will do. Thus, the monetary target may be gone but the precepts of monetarism will endure.

2

The Policy Record: 1981-82

This chapter focuses on events in monetary policy from early 1981 onward, with the emphasis on the mid-1981 monetary crunch. Several explanations are offered as to why the Bank of Canada hit the monetary brakes so hard in this period. One conclusion that becomes readily apparent is that for all intents and purposes the Bank abandoned monetary targeting in mid-1981: The Bank's announcement in late 1982 merely recognized what had occurred some 18 months earlier. However, it is important to place these last two years in a longer-term perspective. Although it is clear that the Bank of Canada has altered its strategy for implementing monetary policy, it is much less certain that there has been a shift in the overall anti-inflationary policy. The latter point will be the subject of later chapters. It deserves mention at this point in order to alert the reader that the intent of the present chapter is much narrower -- to describe and at times to evaluate the events associated with the most stringent bout of monetary policy in the nearly fifty-year history of the Bank of Canada.

LOWERING THE TARGET RANGE: FEBRUARY 1981

In Money, Inflation and the Bank of Canada, Volume II,[1] the description and evaluation of the Bank's monetary policy record culminated in the lowering of the Bank's M1 target range to 4-8 percent (from 5-9 percent) in February 1981. That target range remained in effect until November 1982, when the Bank officially abandoned monetary targeting. There are at least three aspects of this February 1981 decision that are important to the central theme of this monograph. First, the 4-8 percent range was centered below the mid-point ot the previous target range. In the Governor's words:

> The base chosen for the new target range is somewhat below the centre of the previous target range to take account of the fact that during the recent period there have been certain changes in the practice of chartered banks which appear to have given rise to some economies in the use of M1 balances but which have no broad economic significance. The main such change has been the rapid spread of daily interest savings accounts since late 1979. These accounts, which are excluded from M1, have now grown to $3.7 billion, and while most of that growth has undoubtedly been at the expense of other forms of savings accounts ... a small part is at the expense of demand deposits (which are included in M1). In these circumstances the fact that the new base is below the centre of the previous range does not of itself constitute an effective reduction of the target limits for monetary expansion.[2]

It was, of course, a continuation of this tendency for technological and financial innovation to affect M1 that eventually led to the abandonment of monetary targets. This will be documented fully in Chapter 3. In that sense the Governor's comment that the "economies

in the use of M1 balances ... have no broad economic significance" turns out, as we shall see later, to be far wide of the mark.

The second important thing about the lowering of the target range in February 1981 is that it was probably the most restrictive target range since the advent of targeting in 1975. Even if M1 had grown at 8 percent (the top of the range), the growth in nominal income that this would have permitted would not have been high enough to accommodate the current inflation rate, let alone any real growth, without a dramatic increase in interest rates, that is, without a significant increase in velocity. Yet this event attracted scant attention from financial journalists. Either they are a woefully inadequate lot, or they simply did not believe that M1 was the most appropriate definition for money. Or perhaps they did not believe that the Bank would stick to its 4-8 percent range. Or perhaps they believed that monetary policy in Canada was dominated by events south of the border. Whatever the case, the Bank was in difficult straits if the most significant reduction in its target range that it has ever made was ignored by the financial community. In other words, the public lost much of its confidence in the Bank's ability to combat inflation. To the extent that this was the case, the behavior of private sector agents could no longer be altered by <u>expectations</u> of future monetary policy, but only by <u>actions</u> by the Bank. What this implies is that the real-side costs of reducing inflation would be correspondingly greater. The reason for this is at the heart of Chapter 4, which evaluates the 1975-82 experiment with monetary targeting.

The third point is related. Even though I have argued that the implementation of monetary policy was

far too gradual over the 1975-80 period, it was clear in 1981 that monetary policy was going to become more and more restrictive. The Bank of Canada also recognized that its policy from 1975 to 1980 was overly gradual:

> The reason [for less progress on the inflation front] is not that the anti-inflationary financial policies followed were misconceived but that they were pursued with such gradualism that they did not succeed in dominating the influences that were working in the other direction.[3]

Nonetheless, the successive reductions in the target range were eventually going to bite and bite hard. In my opinion, the Governor should have made that clear to Canadians. Instead, in uncharacteristic understatement, he noted:

> The Bank recognized that the new target range was low relative to the current growth of national expenditure.[4]

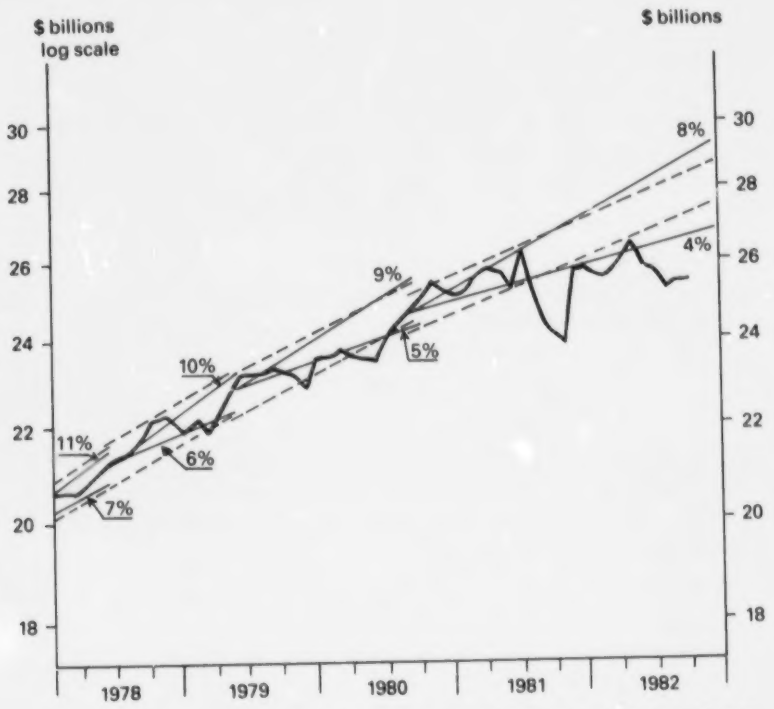
Referring to the likely thrust of monetary policy in the wake of this new target range as the "coming confrontation," I argued that, whereas from 1975 to 1980, "monetary gradualism was never really attempted," in its place the country would "now face monetary abruptness or the cold turkey approach to unwinding inflation."[5]

However, neither I nor, I suspect, most others, anticipated just how restrictive monetary policy would become.

THE 1981 MONETARY CRUNCH [6]

Monetary policy from mid-1981 onward represents a

FIGURE 1: **Money Supply* and Target Growth Rates, Seasonally Adjusted**



*Currency outside banks plus Canadian dollar demand deposits at chartered banks.
Source: *Bank of Canada Review,* November 1982, p. S2.

rather critical break from monetary gradualism. One glance at Figure 1 will confirm this. From a peak level of nearly $26 billion in early 1981, M1 plummeted to $24 billion in the fourth quarter.[7] On a seasonally adjusted basis, this represents a decrease of 14 percent at annual rates over the six-month period. Never before had the money supply declined so precipitously for so long a period. Monetary abruptness rather than monetary gradualism had become the order of the day.

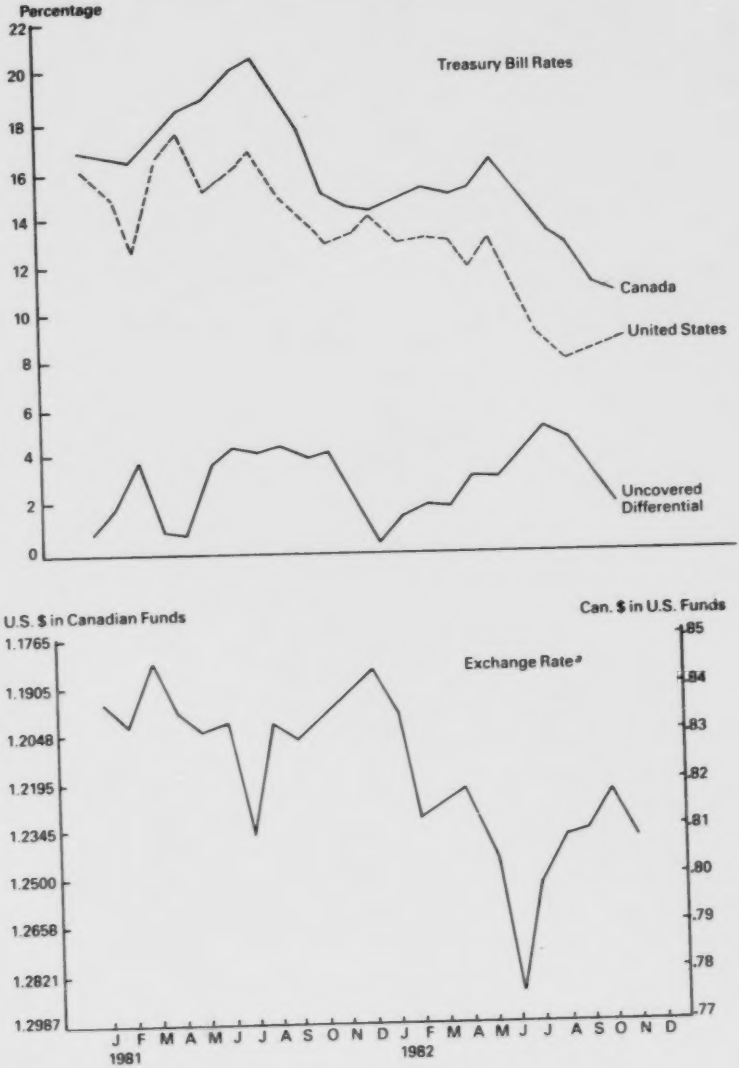
Associated with this abrupt decline in M1 was an equally dramatic surge in short-term interest rates --

90-day corporate rates exceeded 22 percent, and the 90-day treasury bill rate reached 21 percent (see Figure 2). It is important to note that this interest rate escalation also coincided with the opening of a very substantial differential of Canadian over U.S. rates -- reaching 4½ percentage points at one point in late 1981, as Figure 2 indicates. Although interest rates have fallen sharply since then, the Canadian-U.S. differential first narrowed considerably in early 1982 and thereafter widened once again, with the August 1982 differential even surpassing the 1981 peak. In Canadian financial circles, there are probably two ways of interpreting the differential. The first relates to the pattern of inflation in Canada and the United States. With inflation in the United States running some 3 or 4 percentage points below the comparable Canadian rate, a differential of 3 to 4 percentage points in nominal interest rates means that real rates of interest are roughly equal in the two countries. That is one way of rationalizing the continuation of the differential in recent months.

A second explanation of the differential relates to the Bank's exchange rate focus. From Figure 2 (which also plots the exchange rate), it is clear that the interest rate differential increased whenever the Canadian dollar was under severe downward pressure, as it was following the introduction of the National Energy Program (NEP). These and other hypotheses will be dealt with in more detail in the following section, which assesses the rationale for the monetary policy of the 1981-82 period.

To conclude this very sketchy overview of economic conditions, Figure 3 presents, in rather stark fashion, the extent of the deterioration on the real side of the economy. The world-wide recession and the high real

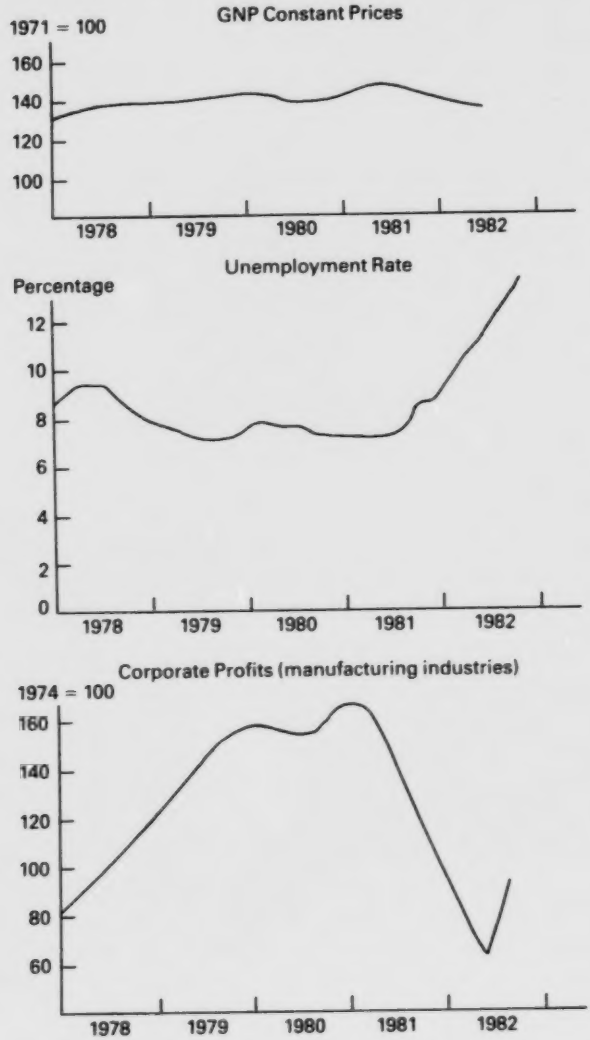
FIGURE 2: **Rates of Interest and Exchange: Canada and U.S.A.**



[a]Closing spot rates

Source: *Bank of Canada Review,* December 1982, pp. S22, S72, S135.

FIGURE 3: **Some Real-Side Indicators of the Recent Recession**



Source: *Bank of Canada Review,* January 1983, pp. S9, S10, S13.

rates of interest in the United States were bound to take their toll. However, there is little question that the severity of the monetary crunch in Canada added to the severity of the recession.

RATIONALIZING THE CREDIT CRUNCH: SOME HYPOTHESES

Exchange Rates as a Policy Target

Why did the Bank of Canada slam on the monetary brakes in mid-1981? My explanation is that the exchange rate became the principal concern in the conduct of monetary policy: in other words, it became the immediate target and, as a result, both money growth and interest rates were relegated to the role of accommodating variables. It is important to note, however, that the Bank's concern about the exchange rate was somewhat different from its previous concern about external events. The purpose of this section is to detail the circumstances that made it different.

As early as 1978, exchange rates assumed a prominent role in the conduct of monetary policy.[8] In part, the economics of the argument was straightforward. A depreciation in the exchange rate would stimulate exports and, with them, output and employment. It would also increase the costs of imports and hence the CPI, which in turn would be reflected in wage contracts across the country, and would exacerbate cost-push inflationary pressures. For those reasons, depreciation was a mixed blessing, particularly in the context of a monetary policy intended to lower inflation. The Bank went farther, however. In 1978, for example, it rationalized its preoccupation with the external value of the dollar in terms of the possibility that the exchange rate might overshoot on the downside;

that is, the depreciation might go well below the equilibrium level for a time, and the lasting result would be not so much a stimulus to exports as increases in domestic prices and wages. This concept of exchange rate overshooting was the subject of considerable discussion in the theoretical literature in the early and mid-1970s. On the practical side, such things as the existence of external debt denominated in foreign pay and the oil-import compensation program tied to the world price of oil (which would increase proportionately with the decline in the exchange rate) implied that some components of the current account would worsen with a depreciation. In the 1979 Annual Report, the Bank carried the argument further by pointing out that, with many export sectors already operating at or near full capacity, a decline in the value of the dollar would do little to increase output or employment. Thus the principal effect of a depreciation would be its impact on wages and prices, both directly (through the rise in the prices of imported goods) and indirect (through the rise in profits of the exporting sector, which would soon find its way into wage increases).

The Bank also argued for more emphasis on the exchange rate in terms of its operating procedures.[9] The explanation was as follows. Suppose the exchange rate were allowed to fall. As a result, nominal income would grow because of the rise in exports and output (caused by the depreciation) and also because of the increase in prices occasioned by the rise in the costs of imports. That would lead to an increase in the demand for money, which in turn would generate a more rapid growth in M1. The Bank would then react by increasing interest rates, thereby curtailing the rise in M1. These events might take considerable time. Why

not short-circuit the process and raise interest rates immediately in response to the incipient decline in the exchange rate, thereby nipping in the bud, as it were, any tendency for M1 to increase?

In previous volumes in this series, I have argued that this concentration on the exchange rate in the 1978-80 period was not only misguided, but served to erode the confidence of Canadians in the whole monetary targeting exercise. Analysts quickly realized that, once the Bank began to concentrate on the exchange rate, events in the United States became more important for predicting the future course of Canadian monetary policy than anything the Bank was doing.

The focus on exchange rates was also a large part of the reason why monetary targeting had so little influence on the inflationary expectations of the private sector. The obvious question then becomes: why did the exchange rate targets not act as a substitute for monetary targets and encourage agents to incorporate the U.S. inflationary expectations? To a degree they probably did. Unfortunately, however, over this period (from 1978 to 1980), the U.S. inflation rate rose from 7.7 percent in 1978 to 11.3 percent in 1979 to 13.5 percent in 1980.[10] Moreover, the use of the exchange rate target over this period did not consist of picking a particular value for the exchange rate and sticking to it. Rather the Bank attempted to resist the depreciation several times as the rate fell from 91.1¢ in the fourth quarter of 1977 to 83.6¢ in the fourth quarter of 1980. This approach gives precisely the wrong message to agents in that it almost encourages them to harbor inconsistent expectations of inflation, since the authorities can always make them consistent by allowing a further fall in the exchange rate. As a final comment on the Bank's concern with the exchange

rate over the 1978-80 period, the argument relating to short-circuiting the monetary expansion associated with depreciation is really not a matter of exchange rates but of the implementation of policy: reserve-base control of the monetary aggregate rather than interest rate control would also provide this short-circuiting. The points raised in this paragraph will be dealt with in somewhat more detail in Chapter 4 since they are directly related to the evaluation of the monetary targeting strategy.

With this as a backdrop, I turn now to the exchange rate considerations from 1981 onward.

The Fallout from the National Energy Program

The immediate and critical factor on the exchange rate front that lay behind the mid-1981 monetary crunch was the spate of takeovers that resulted principally from the National Energy Program (NEP). In the words of the Governor:

> In the circumstances that existed, purchases of foreign-owned businesses in Canada had to be financed through additions in one way or another to Canada's interest-bearing foreign indebtedness. In most cases this was accomplished by the Canadian purchasers doing the related foreign borrowing. They did it mainly by borrowing U.S. dollars from Canadian banks, which in turn borrowed the funds on international money markets. But a significant part of the takeover activity included no arrangement for foreign financing. In those cases Canadian dollars were converted in the exchange market, putting immediate downward pressure on the Canadian dollar. In July that pressure was very great. Large sales of Canadian dollars in an exchange market that had already been unsettled by the growing scale of takeover operations triggered a steep slide in the exchange rate.... in late July the Minister of Finance requested banks to limit their financing of such operations in order to ease the pressure on the exchange rate.

> The effect on the exchange market of the foreign exchange conversions produced by the wave of takeovers was reinforced both by uncertainty as to the scale of conversions from further takeovers and by longer-term balance of payments considerations. In respect of the longer term, it was clear that the annual interest cost of the foreign borrowing done to finance the takeovers would be much larger for many years than the dividend payments that would have been made by the enterprises taken over. In that way Canada's need to borrow abroad in the foreseeable future was being increased.[11]

There were, of course, other reasons for the downward pressure on the dollar. But even some of them were also related to the NEP; for example, Alberta's crude-oil cutbacks in March and again in June increased Canada's dependence on imported oil. The Bank's response to this mini-crisis was to allow short-term rates to exceed 20 percent and thereby to generate a Canadian-U.S. interest rate differential of more than four percentage points. As a matter of interest, direct investment in 1981 recorded a net outflow of more than $10 billion (five times the previous high) and net short-term capital inflows soared to $14 billion, some $8 billion above the previous high.

The tight monetary policy did succeed in turning the exchange rate around. As Figure 2 shows, the value of the dollar exceeded 84¢ by the end of November 1981. Throughout this period, the interest rate differential remained fairly constant: short-term interest rates fell apace in Canada and the United States.

By December 1981, a more severe and more prolonged decline in the exchange rate had begun -- a rapid drop to below 81¢ by early 1982, a temporary levelling out for a few months, and then a dramatic plunge to the 78¢ range. Sorting out the underlying monetary policy for

the episode is at the same time more difficult and more controversial.

Presumably the Bank of Canada's forthcoming 1982 Annual Report will comment on this period. For present purposes, I would venture that part of the Bank's rationale will probably be as follows. The very tight policy throughout most of the latter half of 1981 was beginning to take its toll on the real side of the economy. On that score, some slackening was in order. Moreover, the level of M1 was well below the target range, so that some easing up was also consistent with monetary targeting. Accordingly, the Bank did not raise short-term rates at the end of 1981 in spite of the interest rate increases in the United States. Thus the Canadian-U.S. interest rate differential fell and, with it, the exchange rate (see Figure 2). That state of affairs was tolerable as long as the exchange rate did not sink too far, but once the weakness in the dollar became very evident (in May or June of 1982), the Canadian rates once again increased in relation to American rates.

While this rationalization-cum-description constitutes part of the explanation for recent financial events, it does not, in my opinion, go far enough. There were two other strong influences on the monetary authorities. The first relates to the very unfavorable domestic and international implications of the November 1981 federal budget. Short of creating a considerably higher interest rate differential than the existing four percentage points (and, hence, a considerably higher level of domestic nominal rates since the U.S. rates rose during this period), there was, in my opinion, no way that the Bank could have prevented the subsequent decline in the dollar, given the degree to which investors' confidence was undermined by the

budget. Caught between a rock and a hard place, as it were, the Bank simply held firm to its practice of setting interest rates and allowed the exchange rate to drop. But when this depreciation started to get out of hand, the Bank resorted to restoring the previously large interest rate differential and once again lent support, by domestic measures, to the external value of the dollar.

Reaganomics

Underlying all this was an even more critical factor -- Reaganomics. The economic policies of the Reagan Administration were beginning to take root in the United States. Price and wage inflation were declining rapidly. Canada was quickly finding itself off-side vis-à-vis its major trading partner. If the trend were to continue for any length of time, the Canadian dollar would have to be devalued in order that we could remain internationally competitive, and that would fuel the expectation that inflation would continue at high and probably rising rates. Seven years of Bank of Canada anti-inflation policy may have kept inflation from being even higher than it has been. But for various reasons (some elaborated above and some to be elaborated later), Canada made precious little progress in reducing inflation, let alone inflationary expectations, to acceptable levels. Now, with the apparent success of the Americans in lowering price and wage inflation, the situation became nothing short of critical.

To underscore those developments, it is convenient to examine Tables 1 and 2. In terms of the two years of quarterly CPI data in Table 1, the Canadian inflation rate is less than that in the United States

TABLE 1

Canadian-U.S. Price and Wage Trends

		Consumer Prices		Wages	
		Canada	U.S.A.	Canada	U.S.A.
1980	II	10.6	12.8	10.0	8.9
	III	11.1	12.5	11.2	10.2
1981	I	12.2	11.1	11.2	10.6
	II	12.5	9.8	12.6	10.9
	III	12.6	10.9	11.8	10.0
	IV	12.3	9.6	12.5	8.1
1982	I	11.6	7.7	13.0	8.0
	II	11.5	6.8	12.0	6.7

Source: Calculated from International Monetary Fund, International Financial Statistics, November 1982, various pages.

TABLE 2

Unit Labor Costs[a], Canada and the United States (percentage change)

	1979	1980	1981	1982[b]
Canada	8.5	11.9	10.7	12.4
U.S.A.	10.2	10.3	8.9	8.4

[a] Ratio of labor compensation to real output

[b] Estimate

Source: Pitfield Mackay Ross, Economic and Financial Outlook, 1982, January 1982, p. 4.

during the last half of 1980 but by the fourth quarter of 1981 (the relevant period for our analysis) the situation was completely reversed: U.S. inflation rates were almost three percentage points below the Canadian rates, and the gap widened to nearly five percentage points by mid-1982. As for wage inflation, by the fourth quarter of 1981, the rate in Canada was outpacing that in the United States by over four percentage points and the gap widened further by mid-1982. These broad trends were also incorporated in forecasts made during this period. Table 2 presents one such forecast published in early 1982. Over the 1979-82 period, Canadian unit labor costs were on an upward trend. The reverse was true for the United States. It is obvious, then, that the Bank's seven-year crusade against inflation was not doing well in absolute terms, and even more obvious that it was not doing well in relation to the advances that were being made in restraining wages and prices south of the border.

This was the critical challenge. In some way or another, Canada had to get back on side vis-à-vis the United States. Put somewhat differently, the wage and price discipline imposed on the Americans had to be transferred to Canada. The obvious way to sø was to tie our dollar to the U.S. dollar. That meant, of course, that the monetary targets were no longer meaningful (indeed, the relationship of M1 to the target called for a more expansionary policy for most of this period). In short, we effectively abandoned both monetary gradualism and monetary targeting; the path of M1 and interest rates were to be by-products of the exchange rate strategy. To be sure, the message of restraint was conveyed by domestic interest rate policy. But the basis of the policy and the Bank's ability to hold the line were rationalized by reference

to financial events in the United States. In this important sense, the discipline imposed on the Canadian economy was an external discipline.

This analysis raises several issues. For example, why did seven years of monetary targeting not succeed in imposing sufficient internal discipline on the pace of domestic wage and price inflation? Did we expect too much from monetary targeting? Or is there something inherently wrong with this approach to monetary policy? Or did the problems lie elsewhere? Most of these issues will be addressed in Chapter 4, which evaluates Canada's experience with monetary targeting. The discussion of the 1981-82 policy record needs to be placed in a longer-term perspective in order to ascertain the degree to which it constituted a shift in policy (as distinct from a shift in strategy) -- away from monetary targeting and toward exchange rate targeting. This question, too, will be addressed in Chapter 4. Of more immediate concern is what led the Bank to abandon its monetary targets. This is the subject of the next chapter.

3

Abandoning the Targets: What Went Wrong with M1

This chapter discusses some of the principal reasons that led the Bank to abandon M1 targeting. Included also is an analysis of the alternative measures the Bank might have considered in order to maintain targeting and of some of the likely reasons why the alternatives were not adopted. To provide a backdrop to the issues covered in this chapter, and indeed the following two chapters as well, it is important to spell out the Bank of Canada's 1975 monetary policy and the role of monetary targeting within that policy.

THE RATIONALE FOR MONETARY TARGETING

Underlying the Bank's 1975 policy were two realizations: first, that inflation must be brought under control in order to provide a climate for sustained real growth in output and, second, that the key to controlling the rate of inflation lay in controlling the rate of monetary expansion. The Bank has always been very clear about this:

> Whatever else may need to be done to bring inflation under control, it is absolutely essential to keep the rate of monetary expan-

> sion within reasonable limits. Any programme that did not include this policy would be doomed to failure. There is no way to preserve its value if money is created on an excessive scale.[1]
>
> Price stability is not an end in itself; it is a means to an end. The goal is an economy that performs well.... Canadians want that kind of economy, but we won't get it without restoring confidence in the value of money.[2]

The basis of the Bank's intention to control the rate of money growth in order to control the level of inflation was the acceptance of an empirically stable "money-demand function." At the risk of over-simplifying, one can define the money-demand function as the relationship between the public's demand for money balances, on the one hand, and the level of nominal income or current-dollar GNP, on the other. If this money-demand relationship is stable,[3] then changes in money growth would result in predictable changes in the growth of nominal GNP. One can, as a first approximation, express changes in the growth of nominal GNP as the sum of the growth rates of its components -- real output and prices. In the short term, a decrease in the rate of money growth will generate a roughly comparable decrease in the growth of nominal GNP. But just how the decrease in the growth of nominal income will be divided between changes in output and changes in prices is difficult to predict. It will depend on such things as the rate at which real output in the world is growing and the level of price inflation that agents are expecting at the time. Over the longer horizon, where one can reasonably expect that the growth of real output will vary within narrow limits, a decrease in the rate of money growth will result principally in a decrease in the rate of inflation. In this way, one can envision the linkage as going from

money to nominal GNP and then to prices.

These concepts will be discussed further in the next chapter. For present purposes, it is useful to note, however, that the Bank's overall approach can lead to two separate sorts of evaluations of the policy in the short term: (1) how well has the Bank done in bringing down the level of money income?, and (2) how well has the Bank done in eradicating inflation? Over the longer term, these issues will be one and the same. But this need not be the case in the seven-year targeting experience, as the next chapter will emphasize.

With this necessary detour out of the way, we can now continue to examine the Bank's formulation of policy. Having decided to control the rate of money growth, the Bank's next obvious step is to decide on a definition of money. There are really two issues here. First, since the goal is to manipulate money growth so as to have some control over the future growth rate of nominal income and hence inflation, the chosen aggregate must have a close relationship to the growth of money income. Second, the aggregate must be amenable to control by the central bank. Naturally, the Bank recognized this:

> The choice of a particular monetary aggregate to use as a guide is primarily a matter of selecting the one whose behaviour over time appears to be most systematically related to the trend of national expenditure and to short-term interest-rate movements.[4]

The Bank opted for M1, currency plus demand deposits at chartered banks, as its preferred money aggregate and adopted an interest rate mechanism for controlling M1.[5]

In practice, the process works as follows. The Bank estimates a money-demand function -- an empiri-

cal relationship between M1 and variables such as income and interest rates. The size of the coefficient on interest rates (which should be negative, since an increase in interest rates will increase the opportunity cost of holding M1 and agents will therefore economize on their M1 balances) provides the Bank with a quantitative lever for controlling M1 -- increasing or decreasing interest rates by x percentage points when it wants M1 growth to fall or rise by y percent. It should be emphasized that this interest rate control mechanism attempts to monitor the supply of money by manipulating the public's demand for M1 balances.

Since the purpose of monetary control is to bring inflation down to acceptable levels, one obvious alternative would be to do this in one fell swoop, that is, to set M1 growth immediately at its desired steady-state growth rate, say 3 percent. The Bank did not opt for this cold-turkey approach to controlling inflation. The oft-quoted rationale runs as follows:

> The trouble with this prescription [the cold-turkey approach] is not with the medicine but with the dosage, which would be so great that the patient would suffer excessively while it was working.[6]

Rather, the Bank chose to reduce M1 growth gradually. It is this approach to implementing monetary policy that has given rise to the term "monetary gradualism" to describe the Bank's 1975 policy.

Now the targets enter the picture. Suppose that in a given period the growth of real output is 4 percent and the rate of inflation is 11 percent, for a total growth rate of nominal income of 15 percent. Suppose further that the Bank wishes to provide only enough monetary stimulus to allow a 12 percent rate of

nominal income growth. For simplicity, assume that the real income elasticity of the demand for real balances is unity. This implies that an M1 growth of 12 percent is consistent with a nominal income growth of 12 percent. The Bank would then set 12 percent as its monetary target. In practice, however, since there is some "slippage" in the empirical relationship, and for other reasons that will be detailed later, the Bank sets a target range, with 12 percent as the mid-point and upper and lower limits two percentage points higher and lower (that is, the target range in this case would be 10-14 percent). The target values for nominal growth of income and money are then inserted in the empirical relationship (the money-demand function), and the equation is solved for the rate of interest that ought to generate this 12 percent money growth. The Bank would then implement this interest rate.[7] If money growth began to exceed 12 percent, and particularly if it exceeded the upper bound, the Bank would raise interest rates in order to decrease the growth of M1. And if the growth of M1 fell, the Bank would lower interest rates. In this way the Bank exerts control over the growth of future nominal income.

The essence of monetary gradualism was, not surprisingly, to lower these monetary targets gradually. The upper and lower bounds of the initial target range were 15 and 10 percent respectivly. These were successively lowered, at intervals of roughly one year, until they stood at 4-8 percent when the policy was terminated last November. The following statement concerning the first lowering of the range expresses the philosophy underlying such changes.

> The revised target [from 10-15 percent to 8-12 percent] reflected the judgement that if past relationships continued, M1 growth in this [new] range would be consistent with

> reasonable output growth together with a continuing decline in the rate of inflation.[8]

Several further comments are in order. First, monetary targeting is a neutral term in the sense that it can be associated with a monetary policy that lowers targets gradually or abruptly. However, since the 1975 policy thrust embodied a gradual lowering of M1 targets, I shall be using the phrase monetary targeting as a synonym for monetary gradualism, unless otherwise noted. Thus, the term "monetary-targeting strategy" will refer to the entire policy described above.

Second, the theory underlying monetary targeting has implications for the behavior of interest rates and the exchange rate. Briefly put, even though the Bank of Canada uses interest rate settings over short periods to control the supply of money, ultimately the interest rate must be dictated by market forces consistent with the achievement of the desired path of money growth. "We cannot aim simultaneously at two targets with one gun,"[9] was the way the Bank expressed this precept, and it was evident that the Bank's sights were on the money supply, at least at the inception of the policy. Much the same applies to the exchange rate. Pegging the exchange rate in a small open economy implies that the monetary authorities forfeit control over the rate of money growth. Since this would be inconsistent with the policy adopted in 1975, the Bank of Canada must take a disinterested approach with respect to the exchange rate if it wishes to achieve its target for internal money growth. This, too, was explicitly recognized by the Bank in 1975.

Third, it might appear that monetary targeting puts monetary policy on automatic pilot, as it were. Such is not the case, however. For one thing, the Bank has discretion with respect to both the timing and the amount of any reductions in the target range. For

another, suppose that M1 is outside the target range, say below the target range. The immediate response would apparently be to lower interest rates so as to bring M1 back onto target. This is, of course, the correct approach if M1 is too low because money income is growing far more slowly than expected or desired. But it is not the appropriate response if M1 is below target because citizens now want, permanently, to hold less money per dollar of national income. Put differently, if there has been a permanent downward shift in the demand for money at unchanged interest rates and nominal income, then the Bank ought not to attempt to bring M1 back on target. The new, lower level of M1 can support the same level of nominal income as the previously higher level of M1 could, if the only change is a desire by citizens to hold fewer money balances per dollar of money income (because, say, of technological innovation). To attempt to bring M1 back onto the target range under these circumstances would constitute excessive monetary expansion. At the risk of oversimplifying, keeping money in the target growth range is the appropriate response if the disturbances arise in the Keynesian IS curve. It is not the correct response if the shock is due to a change in the demand-for-money function itself, that is, a shift in the parameters underlying the LM curve. Thus, to argue that a system of monetary targeting is equivalent to being on automatic pilot is quite misleading.

Finally, it is possible that the whole process of monetary targeting can be frustrated if the money-demand function turns out to be unstable, that is, if changes in the public's demand for money are too frequent and too unpredictable. The Bank admitted this possibility at the inception of monetary targeting:

> It should be borne in mind that M1 will provide useful information for policy purposes only so long as the public's behaviour with respect to its holdings of transactions balances per dollar of income continues to follow a reasonably predictable pattern. It is possible that the public's habits in this regard will change over time, perhaps in response to innovations in payments technology and in the characteristics of the various kinds of financial instruments offered by deposit-taking institutions and their close competitors.[10]

In a nutshell, this possibility became a reality: the reason the Bank of Canada abandoned M1 targeting was that it no longer believed that the demand for money was stable enough to be a useful guide for charting monetary policy. The rest of this chapter documents some of the reasons for this instability in the demand for M1.

FACTORS LEADING TO THE INSTABILITY OF THE MONEY-DEMAND FUNCTION

In principle, there are two reasons why the Bank might abandon monetary targeting. First, targeting could be abandoned because the Bank no longer thought that it was an appropriate way to chart monetary policy. I will refer to this as the theoretical rationale. The second reason, and the one referred to above, would be that the demand-for-money function had become so unpredictable that targeting no longer served as a useful guide. Following the Governor, I shall refer to this as the technical reason for abandoning the targets. For purposes of the present section, I accept the Governor's statement that the reason for abandoning the targets was technical rather than theoretical:

> I wish to stress, however, that we have:

> dropped the target solely for ... technical reasons -- not because we have changed our minds about the desirability in principle of money supply targets.[11]

Later I shall address the issue of whether the theoretical concern with monetary targets might have influenced Bank policy from 1975 to 1982.

The following discussion by the Governor of the technical problems associated with M1 as a monetary aggregate provides an overview of what will follow:

> The reasons why the M1 target system ceased to be a good guide are clear enough.... a number of important recent innovations in banking services have caused major and continuing shifts of the money balances held by individuals and businesses for making payments out of the demand deposit accounts that are included in M1. These innovations include the much more widespread availability to businesses of the cash management facilities provided by banks. These facilities permit all the demand deposits balances that may be held by a business across the country to be consolidated at the end of the day and the surplus transferred into an overnight investment account. As for individuals, an increasing number of them are giving up their personal chequing accounts and are instead making use of recently introduced deposit accounts which provide chequing services and pay a competitive savings interest rate when a certain minimum balance is held in the account.[12]

The problems with M1 did not originate overnight. Indeed, they have plagued monetary gradualism almost since its inception. In what follows, I have arbitrarily classified the problems into four categories: nuisance factors, technological and financial innovations, economizing measures, and monetary control issues. As the reader will presently be aware, the demarcation lines for these categories are rather

fuzzy. It is difficult to distinguish between pure technological innovations on the one hand and changes in financial practices that are encouraged by high or rising interest rates on the other. Modifications of the latter type are what I have in mind by "economizing measures." Others, I am sure, would have placed a particular problem associated with M1 in a different category than I have, or perhaps created several additional categories.

Virtually all the problems besetting M1 have been dealt with in considerable detail in the previous books in this series. Indeed, many of them have been raised by the Governor himself in his Annual Reports. For that reason, the discussion will be briefer than it would otherwise be. Finally the fact that the analysis that follows considers only M1 does not imply that alternative definitions for money would be without problems.

"Nuisance" Factors

Postal Strikes

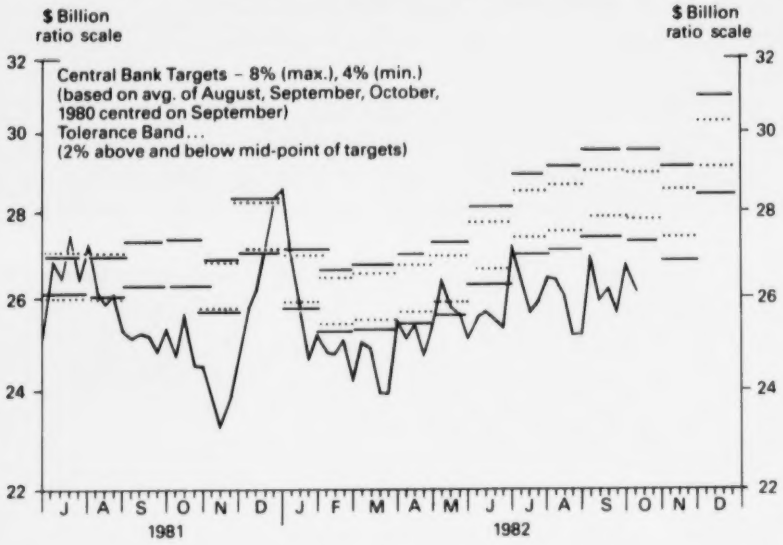
In the very month that the Governor announced the first target range, M1 soared well above the upper bound of the range. The reason was the postal strike in the fall of 1975. Experience from previous (and following) disruptions in the mails shows clearly that they result in a temporary ballooning of M1 deposits. (This is evident in Figure 1 for the mid-1981 postal strike.) The Bank's response to these mail disruptions has been quite correct. Since the movements they cause are a temporary shift in the money-demand function, they should not be, and in general have not been, offset.

Seasonal Factors

In Figure 1, the target range is depicted in seasonally adjusted terms: the actual money supply figures have been seasonally adjusted to correspond to this target range. For purposes of comparison, Figure 4 presents M1 and its target range in seasonally unadjusted terms; that is, the target range has been "deseasonalized" and plotted alongside the actual M1 data. Despite the fact that seasonal adjustment has been refined over the years, the changing seasonal patterns can present problems for the policy authorities. And from Figure 4, it is clear that seasonal differences can be quite large. It takes some time to ascertain whether a particular monthly M1 observation that is an outlier should be confronted by policy measures or whether it represents an alteration in seasonal patterns. As an example, how should a monthly M1 observation influenced by a postal disruption be handled by the seasonal adjustment procedure?

A similar problem is due to the fact that the weekly data that go into constructing the monthly M1 figures are average-of-Wednesdays data. It matters a great deal whether some of the Wednesdays in any particular month happen to coincide with the traditional monthly paydays, such as the fifteenth of the month. Accordingly, the Bank of Canada has adopted an adjustment procedure (roughly equivalent to seasonal adjustment) to take account of the relationship between paydays and Wednesdays. For their part, the Americans tend to use daily figures rather than just picking one day of the week. This automatic "smoothing" may account in part for the fact that their monetary aggregates appear to be subject to much smaller variability than the comparable Canadian series.

FIGURE 4: **M1 and the Target Range (Seasonally Unadjusted)**



Source: Toronto Dominion Bank, Department of Economic Research, *Monetary Digest: North America,* October 18, 1982.

CSB Sales

The annual fall sale of Canada Savings Bonds is another of the many factors that can alter M1 temporarily in a way that may have little economic significance. Experience reveals that citizens tend to transfer their savings into demand deposits and then use those funds to purchase CSBs. Usually, the two transfers do not match exactly and, for a period, agents have excess funds in M1 deposits. Thus, when the CSB sale is particularly large, the November M1 figure has a tendency to increase rapidly. However, the relationship is far from precise, and it is further complicated when the seasonal adjustment is superimposed on it. Needless to say, such "technical" problems can tax the ability of our monetary managers.

New Chartered Banks

Gone are the days when one could count the number of chartered banks on the fingers of both hands. Over the last year or so, more than 50 new banks have been chartered. While most of them concentrate principally on the wholesale market, the bunching of the new entrants created some headaches for the Bank of Canada. Specifically, the financial reporting problems were such that, for a period in early 1982, the Bank suspended the publishing of the figures for seasonally adjusted M1. Even though this was a temporary measure, it did serve to reduce the credibility of monetary targeting: what is the use of targets if the money-supply figures are unavailable?

I have labelled as "nuisance" factors these several problems that influence the reliability of M1. No doubt a great many more exist. Nonetheless, in principle as well as in practice, they are surmountable. Of much more concern to the Bank of Canada in its pursuit of monetary targeting are technological and financial innovations in banking. That is because these innovations will have a greater potential for influencing the amount of M1 balances per dollar of income that agents desire to hold; that is, they will probably alter the underlying money-demand function. Moreover, they are much more difficult to discern and even more difficult to quantify.

Technological and Financial Innovations: Household Deposits [13]

Daily Interest Savings Accounts

In 1979 the chartered banks began to offer daily interest savings accounts to their customers. Before that, most savings accounts paid interest on the mini-

mum monthly balance. Since many "small savers" tend to run their accounts to low levels each month, there was little incentive for them to transfer their funds out of, say, personal checking deposits (which are part of M1) and into personal savings deposits (which are not included in M1). The characteristic of the new daily interest savings accounts is that interest is computed on the daily closing balance. Thus, these accounts gave the small (and large) savers an opportunity to earn near-market rates of interest on funds held even for short periods. Although much of the rapid growth of these deposits came from other sources of savings, some was at the expense of personal checking accounts and, therefore, caused a decline in the demand for M1. The reader might recall from Chapter 2 that it was this precise innovation that led the Governor to set the mid-point for the February 1981 reduction in the target range below that of the previous target range. More recently, the Governor estimated that during 1981 the effect of these deposits has been to reduce the growth of M1 by "something like an additional two percentage points."[14]

Daily Interest Checking Accounts

An innovation of considerably more significance for the confidence that could be placed in M1 as the definition for money was the introduction of daily interest checking accounts in 1981. These accounts offer the combined features of daily interest savings accounts and personal checking accounts. They are usually referred to as "all-in-one" accounts, after the name given to such an account by the first chartered bank to offer the service. In general, they offer a competitive rate on daily closing balances above some

minimum (for example, $2,000) and a much lower rate -- say 3 percent -- on daily closing balances below the minimum. What makes these accounts so troublesome for purposes of monetary policy is that, even though they are intended to be transaction deposits, they are not included in the definition of M1. That is because one of the provisions that customers agree to when they open such accounts is that withdrawals may be subject to a period of "notice." This provision enables daily interest checking accounts to fall outside the purview of demand deposits and, not inconsequentially for the chartered banks, makes them subject to a reserve requirement of 3 percent rather than 10 percent. From the standpoint of monetary control, I have maintained[15] that it is absurd to allow the chartered banks to get away with this technicality. If the notice provision is not in fact enforced by the banks, then the accounts should not be able to escape the 10 percent reserve requirement and should not be excluded from M1. In the limit, of course, Canada is now in a position where no households will hold deposits that qualify to be included in the M1 definition for money.

In large measure, it was this innovation that led the Governor, in his 1981 Annual Report, to conclude that the Bank is no longer inclined to draw inferences about monetary conditions from the recent pattern of M1 growth.

While the introduction of these new deposits was no doubt spurred on by the high interest rates, it was also a by-product of the advance in technology. As Freedman noted:

> [The]most significant factors that led to the introduction and spread of both new types of household deposits were the diffusion of the technology that enabled financial institu-

tions to offer such accounts, the competitive nature of the financial system (including both banks and near-banks) and the prevailing high level of interest rates.[16]

Technological and Financial Innovations: Corporate Accounts

Financial innovation in the area of corporate accounts was continual throughout the 1975-82 period, although in terms of the impact on monetary policy, the 1976-77 period and the more recent period are more important.

Among the principal influences on corporate M1 balances in the 1976-77 period were the following:

- **The trend towards eliminating compensating balances.** Traditionally, companies were often allowed to borrow at privileged rates, provided some portion of the loan was kept in demand deposits at the lending bank. These deposits were known as "compensating balances." In effect, borrowers got a lower "stated" rate of interest, but when the compensating balances were taken into account the "effective" interest rate was correspondingly higher. In the mid-1970s the banks began to eliminate these compensating balances and to raise the stated rates on loans. This served to reduce the need to hold demand deposits.
- **Unbundling.** At the same time, the chartered banks began to apply "marginal costing" to their services. Rather than provide a package of services to clients and require a minimum level of demand deposits to qualify for those services, the banks began to price each service marginally and to charge accordingly. In bankers' jargon, this is referred to as "unbundling." It too decreases a corporation's desire and need to hold demand deposits.

• **Managing corporate cash.** Of considerably more importance, however, was the fact that the chartered banks began to manage the cash of their larger corporate and institutional customers. Cash management of these accounts by chartered banks meant that they could be kept at a minimum. Any excess funds could be cleared daily into interest-bearing accounts (therefore, not included in M1). In fact, as a result the current accounts of large corporations could be reduced to zero, or nearly zero, which in essence converted large-scale corporate banking into a sophisticated version of an overdraft system. As I noted elsewhere, this had the potential of leaving the Bank of Canada in the unenviable position of monitoring an aggregate whose velocity (for the demand-deposit component) may well be fast approaching infinity.[17]

The policy implications of these financial innovations surfaced as early as mid-1976, when M1 fell below the lower bound of the target range and remained there for several quarters in spite of successive reductions in the interest rate. In his 1976 Annual Report the Governor recognized the possibility that, because of these developments, the base for the target range for M1 might have to be lowered:

> Given the levels of GNE and short-term interest rates recorded over the course of the year, the demand deposit component of the M1 series displayed a growing tendency during 1976 to fall somethat short of the levels that might have been expected on the basis of our knowledge of past relationships. A similar tendency has been apparent for some time in the behaviour of demand deposits in the United States. There is thus some reason to suspect that the average amount of demand deposits per dollar of income that the public finds it convenient to hold for transactions purposes may have been declining a bit faster

> recently than it was in earlier years. Although the reasons for this are not entirely clear at this time, the inference is that the recent shortfall of M1 below target may be of less economic significance than a literal reading of the figures would suggest. In the months ahead the Bank of Canada will be watching carefully to see whether this tendency appears to be a continuing phenomenon or merely a transient aberration. If this faster than usual decline in desired money balances per dollar of income reflects a lasting change in the public's money-holding habits, the changed relationship to income will have to be taken into account in setting future targets for monetary expansion.[18]

The appropriate response to these developments would have been a once-and-for-all downward shift of the entire target range, that is, retaining the upper and lower growth rates intact but rebasing the range at a lower level of M1. The Bank recognized as much, as the quotation above shows. However, the ensuing policy was very different -- interest rates were reduced until M1 not only climbed back into the target range but actually hit the upper bound of this range. In large measure, it was this episode in monetary policy that led me to argue that not only was monetary policy far too expansionary in the early years of monetary targeting but it also prepared the way for the rekindling of inflation in the last few years of the 1970s. A recent paper by a Bank of Canada official estimates that the likely impact of these developments over the relevant period was a reduction in the demand for M1 balances in the order of 6 percent.[19]

Examples of more recent financial innovations that have affected the demand for M1 balances relate to the more sophisticated cash-management techniques being used both by corporations and by chartered banks. The

Bank of Montreal led the way in introducing on-line, in-house terminals for its large customers. This allows the corporations to have instantaneous access to their various accounts across the country and, if they wish, to consolidate them every night into a special account that can then be manipulated to the corporations' advantage. At the same time, the chartered banks began to extend their cash management of current accounts to medium-sized and smaller depositors. This service usually entails the arrangement of funds so that they can be used profitably overnight. Freedman provides a convenient overview of some of these techniques:

> There are a number of different ways in which the overnight investment takes place. In some cases the banks pay explicit interest on current accounts at a rate that is below, but moves with the prime rate. In others, the banks impute to these accounts implicit interest which is used to offset both service charges on the operation of the account and float charges relating to the timing of deposits and withdrawals. Some banks tend to use notice deposits, particularly non-personal chequable deposits and non-personal non-chequable deposits (neither of which is included in M1) as the respository of these overnight funds. Balances that are likely to be available for more than one day can also be put into short-term non-personal fixed-term deposits at the banks and even one-day CDs are available although not in very widespread use for working balances. It is also possible to negotiate automatic paydowns of outstanding demand loans with the closing balance in the current accounts. Finally, although the banks will automatically implement some or all of the above transfers for their customers the latter can also use their cash balances to invest in overnight money market instruments although such a decision must be made earlier in the day and cannot be based on the closing balance.[20]

Economizing Measures

Most of the above influences on the demand for M1 are related to changes ushered in by the spread of computer technology. To be sure, the timing of their introduction was influenced by high interest rates and, hence, the opportunity cost of holding zero-interest deposits. However, there is another kind of influence on the behavior of M1 that stems more directly from these high interest rates. I have labelled these influences as "economizing measures," although some readers may prefer to incorporate them somewhere in the previous categories.

The first of them relates to what is referred to as the "interest-rate elasticity" of the demand for M1 balances. As interest rates rise, agents will economize on their holdings of non-interest-bearing deposits. However, the extremely high interest rates recorded recently are well beyond the range of the data points that generated the quantitative relationship between interest rates and the demand for M1 balances. It is far from certain that one can just extrapolate this relationship between interest rates and money to these very high levels of interest rates. The problem is further complicated by the fact that this high-interest-rate period ushered in some of the technological innovations referred to above. Hence, the monetary authorities have an incredibly difficult job in attempting to disentangle the quantitative effect on M1 of those coincident forces. For that reason, the confidence that one can place in the pattern of M1 growth as an indicator of monetary policy is somewhat eroded.

There is a closely related problem associated with

the interaction between interest rates and the demand for M1 balances -- the potential asymmetry of the interest rate response. As interest rates rise, agents learn to economize on their holdings of these non-interest-bearing deposits. Indeed, there is a "learning" process at work here. Some corporations may well have found it profitable to hire personnel to manage their cash more closely than before. Once economic agents have learned how to get along with fewer demand deposits and have, in the process, earned a return on their erstwhile demand deposits, a fall in interest rates may not lead to a corresponding increase in their demand deposits. There is a threshold, so to speak, that, once crossed, may alter their behavior permanently. To the extent that this had occurred, it will pose some problems for interpreting the behavior of M1 as interest rates fall back to more normal levels. With the passage of time (and the accumulation of more observations during periods in which interest rates are falling), it will be possible to settle this issue empirically. In the interim, however, it may cause some concern.

There is one more factor that complicated monetary targeting in the recent period. Even though interest rates are still high by historical standards, they are substantially below their mid-1981 peak. In this transition from higher to lower interest rates, the public's demand for M1 will increase. For some of the reasons discussed above, it may be difficult to get a firm estimate of this increase. But that there has been an increase is not in question. In principle, falling interest rates will cause a once-and-for-all upward shift in the public's demand for M1 and, therefore, they ought to be accommodated by shifting the en-

tire target range upward. In terms of Figure 1, for example, that would entail anchoring the target range to a higher level of M1. Faced with all the other factors influencing M1 that point in the direction of lowering money demand, the upward shift no doubt added to the Bank's concern about the reliability of its definition of money.

Monetary Control Issues

As noted above, the Bank has elected to control M1 by an interest rate control mechanism -- raising interest rates to decrease the growth rate of M1 and lowering them to increase the growth rate. The mechanism works particularly well when all components of M1 are non-interest-bearing. Thus, when the general level of short-term rates rises, the opportunity costs of holding these zero-interest-bearing money balances rises apace and agents will attempt to economize on them. However, this zero-interest-rate fulcrum is rapidly disappearing as far as demand deposits are concerned. This was clear from the quotation from Charles Freedman's paper, in which he noted that banks are now beginning to pay interest on demand deposits. Indeed, some recent estimates suggest that up to 60 percent of demand deposits are now interest-bearing. It is, of course, true that the interest rate paid is well below that on, say, treasury bills. But if the demand-deposit rate, even though it is lower, moves in tandem with the general level of short-term rates, this tends to emasculate the Bank's control mechanism: raising the general level of interest rates will, in such a case, not increase the opportunity cost of holding demand deposits and, therefore, will not encourage agents to

encourage agents to economize on their holdings of demand deposits. To my knowledge, the Bank of Canada has never mentioned this problem in connection with monetary targeting. But it surely must be a worry to the monetary authorities, for it has the potential of seriously reducing the efficiency of their control mechanism. Indeed, it may also have contributed to the termination of the M1 targets.

ALTERNATIVES TO ABANDONING TARGETING

Confronted with a change in the relationship between money and national income, the monetary authorities have several options:[21]

- Retain the existing definition for money but establish a new target range. This would be appropriate if the change in the demand for money were a once-and-for-all shift or if the time path of the shift were predictable and measurable.
- Redefine the monetary aggregate. This could take the form of selecting an entirely new aggregate or extending the existing one to accommodate (that is, internalize) the shifts that are occurring.
- Create an artificial aggregate that adds back into the existing aggregate the fraction of any new instrument that represents a shift out of the existing aggregate.
- Abandon targeting altogether.

The first three options will be discussed in turn in this chapter. First, however, it is important to note that the existence of a target <u>range</u> for M1, rather than a target growth rate, also gives the Bank more flexibility in these matters. All empirical relationships are subject to errors of prediction. Hence, the

existence of a range for M1 (essentially ± 2 percent around the "ideal" M1 growth rate) provides the Bank with some, perhaps considerable, flexibility to deal with any forecasting error in the money demand equation. First of all, supposing that M1 growth is veering off in an unexpected way, it takes some time to decide whether the situation requires offsetting action (because the M1 movements are caused by, say, nominal income growing faster or slower than desired) or whether the behavior of M1 is a result of a shift in the underlying demand for money, in which case no offsetting policy action is required. The existence of a target range rather than a specific growth rate does give the Bank some leeway in assessing these sorts of situations.[22] However, the issue here goes well beyond this. Suppose the Bank thinks that a shift in the underlying behavior of M1 is taking place. What can it do about it?

Adjusting the Target Range

Shifts in the money demand function are, theoretically, amenable to adjustment. The equation for the monetary aggregate can be respecified or reestimated to take account of changes in the economic environment. In practice, however, the story is frequently quite different. It is difficult to isolate, with any precision and within the time available, the many factors that can influence and are influencing the public's demand for M1 balances. This is especially the case if these shifts are continual and do not happen just once. Moreover, if the basic structure of the M1 relationship has indeed been altered, some time must pass before enough new evidence can accumulate to model the structural shifts.

The Bank has, in fact, made some adjustments to

the range to attempt to accommodate such shifts. This was apparent in the February 1981 lowering of the target range, when, in addition to reducing the upper and lower bounds of the target range, the Bank centered the entire range below the mid-point of the previous range. In this particular instance the rationale for the rebasing was the impact on demand deposits of daily interest savings accounts.

Redefining the Monetary Aggregate

Another way of coping with underlying changes in the money demand function is to select an alternative definition for money, for example, one that internalizes many of the technological innovations. The Americans have done just this. A new aggregate, M1B, was defined to replace their equivalent of M1. In addition to currency and demand deposits at commercial banks, it includes checkable deposits from near-banks, negotiable orders of withdrawal (NOW) accounts, and automatic transfer services (ATS) accounts. That does not mean that the Americans have solved the problem. Indeed, because of the deregulation of interest rates and the effect on various deposit accounts, their narrow aggregate is, in the opinion of a member of the Board of Governors of the Federal Reserve System, "in disarray" and its "eventual rehabilitation as a monetary target is uncertain."[23] After noting that broader aggregates, such as M2 and M3, are not affected to the same degree by interest rate deregulation, Wallich adds that "targeting on the broader monetary aggregate, or on a credit aggregate, or perhaps even on the monetary base is entirely possible, although each presents some problems."[24]

Although the Governor of the Bank of Canada, after announcing the end of monetary targeting, said that "the Bank is continuing to search for ways of making more use of a monetary target than it can at the present time,"[25] I do not hold out much hope that this search will ever come up with a broader (and in my opinion more appropriate) aggregate than M1. As for the very broad aggregate, such as currency plus all chartered-bank deposits, the Governor is correct in emphasizing in his various Annual Reports that the problems besetting such a definition might be even more troublesome than those attending M1. Much of the very rapid recent growth in this broad aggregate represents what might be best termed a shift in intermediation. With the rise in inflationary expectations from the early 1970s onward, the maturity structure of debt shortened dramatically and funds that might have otherwise flowed through these longer-term debt markets found an alternative home in the banking system. These changes in the channels through which savings and investment are intermediated are not what one wants to capture in a definition of money.

A definition of money that does, however, merit serious consideration is an extension of the current M1 redefined to include deposit accounts that are used for transaction purposes (for example, the "all-in-one" accounts referred to earlier) and deposits that serve as temporary repositories for transaction balances (such as the interest-bearing overnight deposits). This definition would internalize, within the aggregate itself, many of the technological innovations that have occurred recently. There are at least two problems that would likely be associated with such a redefinition of M1.

First, since the innovations in banking practices are still going on, it is difficult to develop a reliable enough data series to estimate the required money demand function. The second problem relates to the Bank's approach to the implementation of monetary policy. The Bank has always preferred to use an interest-rate control mechanism for influencing the supply of money. This is a very indirect control mechanism. Essentially, changes in interest rates are intended to influence the public's demand for M1 which, since the Bank basically accommodates the demand for M1, determines the supply of money. A more direct control mechanism, referred to as base control or sometimes reserve-base control, would have the central bank control the money supply by exercising more vigorous reserve-management policies. The Bank's continuing reluctance to use base control is predicated on the fact that it might lead to more volatility in interest rates. While there are some grounds for expecting that interest rates would be more volatile under base control[26] (but not necessarily more volatile than they have been recently), it is nonetheless ironic that, as soon as Canada adopted a policy of controlling the rates of money growth, the issue of instrument (interest rate) variability became such an issue that the variability of the target was often neglected. In any event, I have argued that this preference for interest rate control led the Bank almost inevitably to favor M1 as the definition for money.[27] This is because the basic requirement for interest rate control is that the monetary aggregate must exhibit a strong negative relationship between changes in interest rates and changes in the demand for money. Only M1 exhibits such a relationship, principally because the components of M1 usually bear zero interest and, hence, an increase

in short-term interest rates represents an increase in the opportunity cost of holding M1 balances. Not so for the broader aggregates, of which most components are interest bearing. Since these interest rates are set by the chartered banks and not directly by the Bank of Canada, a general rise in short-term rates need not increase the opportunity cost of holding these interest-bearing deposits.[28]

However, as was noted above, some 60 percent of demand deposits are now interest bearing. This renders the interest-rate control mechanism considerably more inefficient and, in principle, much more similar to a reserve-base mechanism in its implications for interest-rate variability. One can therefore hope that the Bank of Canada will now look with more favor on alternative definitions of money.

It is useful to put this discussion of the definition and control of a monetary aggregate in a broader perspective. If one desires to control a monetary aggregate by manipulating interest rates, then it is obvious that, other things being equal, the demand for money should be sensitive to interest rates. However, the "ideal" monetary aggregate need not be interest sensitive. What is essential is that movements in the aggregate influence the behavior of future nominal income. Once targets are set in accordance with the desired path of nominal income, the behavior of money in relation to the targets serves as an indicator of the current policy. Under an interest rate control procedure, this entails setting interest rates at a level that (from the money demand function) will move M1 onto its desired path. Under a more direct control mechanism, the Bank of Canada would inform the chartered banks what levels of reserves would be made freely available over, say, the next quarter; the chartered

banks and the money markets would then set interest rates in a manner consistent with this growth in the monetary base.

According to the criterion of ability to control a monetary aggregate, the obvious candidate is the monetary base, since its components (currency and the chartered bank reserves) are liabilities of the Bank of Canada and, therefore, entirely under its control. While there may be some problems with monetary base targeting (such as the range of chartered bank liabilities subject to reserves and the existence of differing reserve requirements), they are readily surmountable. It should be noted that at least one financial corporation (R.A. Daly and Co.) provides its clients with monthly rates of growth of the monetary base in relation to a target range. In my view, the monetary base deserves serious consideration as a monetary target. It seems more than a little ironic that, to my recollection, the Bank of Canada has never mentioned the monetary base in its recent Annual Reports. Moreover, it does not even publish a data series on the monetary base in its monthly statistical review. It is possible that this is merely an oversight. It is more likely, however, that it reflects the Bank's interest rate-control-mechanism approach to policy implementation that has been in dominance since at least the 1960s and probably well before that. Thus, whatever the merits of targeting on the monetary base, it is, in my opinion, simply too foreign to the Bank's current modus operandi to be considered seriously.

In summary, then, it is my belief that one of the unstated reasons why the Bank has been willing to abandon targeting is precisely that the interest rate control mechanism has become increasingly inefficient.

Even if M1 were capable of being resurrected, the variability in interest movements that would now be needed to control it from the demand side would give the Bank considerable cause for caution. Indirectly, then, this suggests that there may also be a theoretical rationale (as defined in the introduction to this chapter) as well as a technical rationale for giving up targeting.

Creating a Shift-Adjusted Aggregate

The third way that one might react to the shifts in M1 is to add back into the aggregate the fraction of any new instrument that represents the shift out of the M1. "Shift-adjusted" M1B in the United States is an example of this approach. I accept Charles Freedman's conclusion that such a practice is not possible in Canada because of the lack of information needed for such a complex reassignment. As he points out, there are no data available on the proportions of daily interest savings accounts and daily interest checking accounts that have come out of the personal-checking-account component of M1.[29]

CONCLUSION

There is no question that M1, as the Bank's preferred definition of money, has seen better days. There is also no question that some, if not most, of the problems that have beset M1 were predictable and that, therefore, its ultimate demise was also predictable. To be fair, however, difficulties would also have arisen with other definitions of money. There will always be a gray area between those monetary liabilities that fall within the definition of money and those that fall just beyond. The mere process of defining a

monetary aggregate is bound to influence the chartered banks' approach to the management of the near substitute for the monetary aggregate. My own view is that high interest rates and technological innovations were bound to have a much more severe impact on a very narrow aggregate like M1 than on a broader definition. In part that was because the previous zero-interest-bearing components of M1 were particularly prone to financial innovation as interest rates soared. Nonetheless, the Bank of Canada was undoubtedly not alone among central banks in discovering that its monetary aggregate was less reliable than it had expected or desired. And even for some of the central banks that have maintained the principle of targeting, the day-to-day practice of policy has been quite different. For example, while the Americans have kept their target, the narrow definition of money has been soaring far above target growth for several months now.

From the standpoint of both the Bank of Canada and economic agents, the critical question becomes the following: Now that monetary targeting has been abandoned, what can one expect from monetary policy? Will the struggle against inflation be continued? Over the longer term, will any monetary policy guidelines or benchmarks be provided or will the Bank rely on discretionary measures? These issues will be addressed (but are not fully answerable by their very nature) in the final chapter.

4

Monetary Targeting: An Evaluation

No recent policy issue, even the National Energy Program, has aroused as much public concern and debate as the high interest rates of the past few years. Not surprisingly, therefore, there is little chance of achieving unanimity among economists, let alone the public, on the question whether the Bank of Canada's monetary stance over 1975-82 was appropriate. I suspect that even with the advantage of, say, 10 years of hindsight, as well as a comparative evaluation of the policies of the western industrialized countries, historians will still find this period a fertile area for reinvestigation and reinterpretation. Be that as it may, the purpose of this chapter is to attempt a rough assessment of the seven-year period of monetary targeting, or monetary gradualism. It is probably important for me to acknowledge that I supported the philosophy of monetary gradualism at its inception in 1975 and indeed ever since. However, the manner in which this philosophy was implemented is quite another matter. And, as I shall elaborate below, not all of the implementation problems can be laid at the feet of the Bank of Canada -- the fiscal arm of macro-policy

must also share in any lack of success of Canada's anti-inflation fight.

THE ROLE FOR TARGETS

To help clarify the analysis that follows, it is useful to examine the aspects of monetary targeting that differentiate it from a policy without targets. Consider the following two situations, which embody the same actual policy. For convenience, let us assume that this actual policy is a policy of restraint. In the first situation, monetary policy targets exist and, furthermore, the policy is stringently followed. In the second, the actual monetary policy is identical but there are no targets and there is no prior indication of what the path of M1 will be. The interesting issue is whether or not monetary targeting should make a difference. Over the longer term the answer is probably no -- the actual path of monetary policy will eventually determine the pace of nominal income growth at the natural unemployment rate. But the short and intermediate term is a different matter. The presence of targets should ease the real-side costs as the economy moves to a lower inflation rate. This is because economic agents can foresee future monetary policies and can anticipate them in their decision-making. The fact that money growth will be lowered gradually means that inflation should be falling as well. If this is fully realized by economic agents, then the pace of wage and price increases can be reduced without much effect on the level of output. On the other hand, in a situation where the successive moves toward restraint catch economic agents by surprise, the wage and price contracts in existence will be inconsistent with the new restraint, with the result that monetary policy will cause contractions

in real output, including increased unemployment and reduced profits.

Obviously, for monetary targeting to be successful, the monetary authority must be committed to adhering to the targets and the public must also believe that the central bank is so committed.

EVALUATING THE TARGETING EXPERIENCE

At one end of the spectrum one can argue that monetary targeting has been quite a success. After all, there were several important domestic and external factors during the 1975-82 period that, by themselves, would have led either to an upsurge in inflation or to a fall in output. Some of them were:

- The fact that the dollar was substantially overvalued at the outset of targeting. Even if the depreciation was expected, it was still a serious shock to costs and prices.
- The doubling of U.S. inflation over the 1978-80 period.
- The doubling of world energy prices in 1979-80.
- The recent very erratic swings in U.S. monetary policy and particularly in nominal interest rates.
- The severity of the world recession and the part it played, independent of domestic monetary policy, in Canada's poor record in output and employment.
- The lack of meaningful support in the inflation fight from other parts of overall stabilization policy.

Yet despite the existence of these exogenous factors, by the time that targeting was discontinued, inflation

was below double-digit rates and was continuing to fall. The supporters of the Bank's general policy might well ask what the current rate of inflation would be in light of those shocks if the Bank had continued to accommodate inflationary pressures as it had done before 1975.

There is another way of viewing the recent monetary policy record. As noted earlier, the purpose of monetary targeting was to control the rate of nominal income growth and, ultimately, the rate of inflation. Were one to plot, say, a 16-quarter moving average of M1 against a similar 16-quarter moving average of nominal GNP, the result would show that the growth of M1 and nominal GNP have both been falling since 1975. In this sense the policy has worked. Where it has not worked, until very recently, is in bringing about a comparable fall in inflation. In other words, the Bank got a bad break in the way that this decreasing growth of nominal income was divided between the rate of inflation and the rate of output growth, again for some of the reasons enumerated above. This casts an important but different light on the post-1975 monetary thrust. Implicitly at least, it shows that the costs have been high but that success is now in sight.

While I have considerable sympathy with that argument, there is an important part of the story missing. In my opinion monetary targeting was much less successful than it ought to have been. In particular, the influence of the successive target reductions did not reduce agents' expectations of future inflation as much as one might have expected. This meant that tight money had its principal impact by confronting agents' expectations in the markets for goods and labor. Stated differently, the process of lowering inflationary expectations had much heavier real-side costs than

might have been expected in 1975.

Two explanations of this result are possible. First, too much was expected, from an analytical perspective, from targeting. Second, the design and application of the targets left something to be desired. For my part, I probably overestimated the curative powers of monetary targeting. My optimism had more to do with the probable time path of wage and price deceleration under targeting than with the theoretical appropriateness of the overall policy.[1] Basically, however, I believe that the policy of monetary gradualism, or monetary targeting, fell short of expectations because the public lost some of its confidence in the policy. This argument has four strands, which although closely interrelated can be dealt with separately:[2]

- **Monetary policy from 1975-80 turned out to be far too gradual.** This was, in part, apparent from the analysis in the previous chapter of the M1 shifts. Interestingly enough, money growth for the 1976-78 period was too expansionary because the Bank adhered to the announced targets. The appropriate policy would have been to lower the targets in response to the permanent downward shift in the public's demand for money. The degree of monetary ease over this period was even more apparent from the behavior of other variables. For example, for a large part of the period the rate of inflation exceeded the prime lending rate, yielding a negative real interest rate. Such a policy runs the risk of a monetary explosion and the resurgence of inflation even at the best of times. Yet this was the very period when the AIB controls were in force. The purpose of the controls was to allow a more rapid decline in inflation and inflationary expectations than otherwise would be the case. For the Bank to allow

real interest rates to become negative in an environment specifically designed for the deployment of tighter money gives an indication of the inappropriate nature of the policy stance. In short, money growth was not reduced with anywhere near the discipline required in order to unwind inflationary expectations.

From mid-1981 onward, however, one would hardly describe monetary policy as too gradual.[3] But in my opinion, the Bank effectively abandoned monetary gradualism and monetary targeting in mid-1981. Thus I would not consider the post-1981 period as part of the targeting period. The announcement last fall merely made official what was in effect already occurring in practice.

- **From 1978 onward, exchange rate considerations became a policy goal.** At the very inception of monetary targeting the Bank recognized that both interest rates and exchange rates would have to be determined by the market if the money goals were to be achieved. Beginning in 1978, however, increasing attention was paid to the behavior of exchange rates. There is no question that the exchange rate is a more important variable in a small open economy like Canada than it is, say, in the United States. As noted in Chapter 2, the spectre that exchange rates might overshoot probably increased the monetary authorities' nervousness about letting the exchange rate be determined solely by market forces. Moreover, one can make a case for exchange rate targeting as a strategy of monetary policy. But none of that detracts from the fact that concentrating on the exchange rate undermines the credibility of the monetary targeting. Analysts quickly realized that the gearing of monetary policy to

the exchange rate meant that what was happening in the United States was more important in determining the future of Canadian monetary events than what was happening in Canada. And what was happening in the United States was a rapid resurgence of inflation. As noted in Chapter 2, the U.S. consumer price index rose by 7.7 percent in 1978, 11.3 percent in 1979, and 13.5 percent in 1980. It was precisely the wrong period to tie our fortunes to the American economy.

In the previous chapter, the technical rationale for abandoning targeting was discussed. Switching from monetary targeting to exchange rate targeting would constitute a theoretical rationale for abandoning the monetary targets. It is probable that, initially, the concern about exchange rates was motivated by the realization that before 1978 the policy was too easy and that focusing on the exchange rate might add more discipline to monetary policy than a continuation of targeting; that is, the targets were inappropriate given the downward shifts in the demand for M1. But that just emphasizes the argument that the target range should have been lowered. And, what is more important for present purposes, the emphasis on the exchange rate necessarily meant that the "made-in-Canada" monetary policy, so well established in 1975, was being rapidly eroded and that the monetary targets would play second fiddle to events south of the border.

- **The Bank's definition of money and its control mechanism hampered the performance of monetary gradualism.** In addition to the M1 issues raised in the previous chapter, there were further ramifications of targeting in terms of M1. The most important was that a substantial number of analysts preferred to base their predictions of future financial trends on the movements

of broader aggregates (such as the monetary base or M2). Some financial institutions even provided charts of these broader aggregates in relation to their own target growth ranges.[4] This situation was complicated by the fact that the Governor admitted that problems existed for M1 definition. Furthermore, the fact that in the 1978-80 period the increased growth of these broader aggregates appeared to be rather closely correlated with the upturn in inflation also did not augur well for the credibility of M1. Perhaps this is partly why the February 1981 lowering of the M1 target range received so little attention despite the fact that, as noted in the earlier discussion, it was probably the most significant of the reductions in the target range. In any event, targeting is not likely to have much influence on citizens' expectations if the chosen definition for money detracts from, rather than enhances, the credibility of the overall policy.

- **Many of the government's other policies undermined the Bank's targeting exercise.** In 1975 many Bank of Canada supporters would have argued (or at least I would have) that it really did not matter very much what the fiscal policy was -- a firm commitment to eradicating inflation by means of successively restrictive monetary targets would be sufficient. It has not turned out that way, partly for the above three reasons but partly too because other government policies were undermining the confidence the public could have in the Bank's "firm commitment." Many examples can be found, but one stands out from the rest. Beginning in the late 1970s, the federal budgets began to incorporate five-year projections for such things as output, employment, and prices. Unfortunately for the success of monetary targeting, these projections incorporated rates of nominal income growth and inflation that were

well above the rates that were implicit in the Bank's monetary targets. This seriously undermined the Bank's anti-inflationary effort.[5] After all, a budget is a blueprint for the nation's economic future and as such it is an important document for agents' planning purposes. What is just as important is that these projections were presumably incorporated into the government's own policies with respect to wages, expenditures, transfers, and so on. The issue is straightforward. Monetary targeting is in for a rough period if these and other similar government endeavors lead to expectations about future inflation that are inconsistent with, and hence undermine, what the Bank is attempting to achieve. Reducing inflation will become correspondingly more expensive in terms of real-side costs because these mistaken expectations will have to be confronted by monetary stringency in the economy's markets for goods and labor.

On the exchange rate front, the government also pulled the rug out from under the Bank. The NEP, followed by the November 1981 budget, put enormous downward pressure on the value of the dollar. What was the Bank to do -- allow the exchange rate to drop significantly and undermine the seven-year fight against inflation, or hold firm on the dollar and allow the fiscal measures to be reflected in higher nominal rates? As noted above, it opted for the latter course, in part because of the impact that Reaganomics was having on the pace of U.S. inflation and its implications for the value of the dollar over the longer term. However, even in early 1982, when the government was under severe pressure to ease the strain of recession, many exchange rate analysts were inclined to expect a directive to the Bank to allow a new devaluation and therefore to give up the fight against inflation.

These policy divergences, or even potential divergences, or even policy divergences, between the Bank and the government donot give agents much guidance as to how much inflation to expect in future.

Richard Lipsey has recently elaborated, albeit in another context, on this notion that the fiscal authorities have been less than helpful in the anti-inflation fight.[6] The point he makes is that economic agents misinterpreted the recent fiscal policy -- "they were extrapolating from past [fiscal] behaviour without realizing the rules had changed."[7] As a result they found to their surprise that wage settlements justified on the basis of the current inflation rate had become untenable in the light of more recent fiscal initiatives. Lipsey's message is that it is important for governments to make their intentions clearer to the private sector, particularly when there is a change in policy. In a sense, therefore, he is calling for something akin to monetary targeting on the fiscal side. This conclusion is particularly à propos the matter at issue:

> It is worth noting that governments ... must bear a major responsibility not only for causing the inflation in the first place, but for making its reduction more costly than it needed to be.[8]

As a final comment on this whole area -- I welcome the principle of the federal government's "six and five" initiative. While there are no doubt all sorts of arguments for and against the program, my endorsement is based on the fact that it is the first major federal initiative in recent times that stands foursquare behind the Bank's continuing fight against inflation. Broader government support should have been forthcoming long ago.

CONCLUSION

The thrust of these arguments is not that the strategy of monetary gradualism was inappropriate. Rather, the point is simply that the goals of monetary targeting, that is, to influence the public's expectations of future inflation and thereby reduce the ultimate cost of lowering inflation, were substantially eroded by the design and implementation of Canada's version of monetary targeting. And, as the analysis emphasized, not all of this erosion can be laid at the feet of the monetary authorities.

5

Implications for the Future

What does the termination of M1 targeting imply for the present and future conduct of monetary policy? Has there been a shift in the Bank's policy or merely a shift in the manner in which the policy is being implemented? What are the possible alternative strategies for future monetary policy? These are the issues that will be addressed in this final chapter.

HAS THERE BEEN A POLICY SHIFT?

Appearing before the Standing Senate Committee on National Finance shortly after announcing the end of targeting, Governor Bouey noted:

> A statement that I made in a speech last week to the effect that the Bank of Canada no longer has a target for the M1 definition of the money supply has given rise to a variety of reactions. Some people seem to think that I was announcing a change in the thrust of monetary policy. Others, who have followed our actions and statements in recent months and years more closely, recognized that no departure from the path we have been following was being signalled.[1]

The Governor is correct when he notes that the November 1982 announcement did not signal a change in the conduct of monetary policy. As I have indicated above, the major shift came in mid-1981, when both M1 and its target range were in effect abandoned.

But what was the nature of this mid-1981 initiative? Clearly, it represented a major change in the method by which the Bank was implementing policy. Gradualism was gone and was replaced by abruptness. However, one might argue that the underlying policy had not changed much. The Bank is continuing with its policy of exerting downward pressure on the growth of nominal GNP and, therefore, on inflation. Even if the Bank had adhered to its targets throughout the 1981-82 period, monetary policy would still have been restrictive. To be sure, there would have been some depreciation of the exchange rate but, in the face of the U.S. monetary policy, the targets would have eventually become binding and interest rates would have increased substantially. According to this argument, then, the underlying policy has not altered -- only the manner in which it is implemented and the degree of determination with which it is being pursued have changed. Presumably this is what the Governor had in mind when he noted that those who have followed the Bank's "actions and statements in recent months and years" would recognize "that no departure from the path we have been following has been signalled."

My own view on this issue is that there has indeed been a shift in the underlying policy. Monetary targeting was an integral part of the 1975 monetary policy. Now, targeting has been abandoned and so has the notion of monetary gradualism. However, it is probable that the manner in which one interprets the recent monetary policy initiatives is not as important as recog-

nizing what has, in fact, occurred.

On this score the termination of M1 targeting does raise some serious issues. The targets provided a very important benchmark for private-sector agents. For one thing, their presence created a degree of confidence that the Bank would not embark on rapid reflation. Moreover, with the federal deficit verging on $30 billion, the target range gave some assurance to the public that the deficit would not be monetized. Thus, the elimination of targets does present the Bank of Canada with the challenge of how to signal the future path of monetary policy to the public. Skeptics will say that the signalling mechanism was not functioning particularly well even under targeting. But it was there, and now it is gone.

Still more important is the impact on the Bank of Canada itself. In principle, monetary targeting provides information relevant to the setting of interest rates. If money is growing above target, then future nominal income is likely to be above the desired level. Increases in interest rates in response to money growth will tend to bring nominal GNP back on track. With the deterioration in the M1 definition of money, the Bank now has to search for another indicator to provide the information it needs. To provide a background for evaluating the alternative indicators, it is convenient to examine further some of the properties of monetary targeting.

MORE STILL ON THE ROLE OF MONETARY TARGETS

In the Senate hearings Senator Duff Roblin addressed this very issue when he asked the Governor:

> Now that you have got rid of M1, just how do you judge your progress? What is your target? How can the public determine how things are going?[2]

The Governor's answer was revealing. After expressing his regret that the Bank had to give up the M1 targeting ("If we could use it, we certainly would"[3]), the Governor stated:

> [The M1 target] gave a sort of bench mark for everybody to watch. I think that it even helped improve the accountability of the central bank.... I think, however, that it still gave more guidance to the public as to how we were getting on. It provided a better method for us to explain just how we were doing.[4]

The importance of something akin to targets to help central banks to rationalize and justify their policies was also highlighted in the Governor's Per Jacobsson Lecture:

> Central bankers are always looking for more reliable guides to the conduct of monetary policy than they have had. Part of the reason is that they want to find a better place to stand against the constant pressures that arise from many sources, almost irrespective of economic conditions, for easier money and lower interest rates. Restraint on monetary expansion is never a popular policy. In my experience I have had much more success in convincing people that monetary policy should have been tighter at some point in the past than in convincing them of the need for restraint in the present. The temptation to put off financial discipline is always great. It is not therefore surprising that central bankers have been anxious to find some objective criterion to assist in choosing and explaining the course monetary policy should take.[5]

Later in the lecture, the governor elaborated on the part that targets have played in this regard:

> The use of monetary targeting has become widespread in industrial countries and has

> unquestionably assisted in achieving a wide measure of public support for monetary restraint in order to bring about a return to price stability. There is no doubt in my mind that without the adoption of guidelines for money growth by central banks the unprecedented interest rates that have been needed to moderate inflation would have been delayed, if they would have been forthcoming at all.[6]

In other words, monetary targeting was a way by which central bankers could exert some longer-term discipline over the many political forces favoring monetary ease. Since monetary targeting acquired a fair degree of theoretical respectability, the discipline carried over to the shorter time horizon as well. The extent to which other monetary strategies possess this characteristic will be discussed in the evaluation of the alternatives to monetary targeting.

Much has already been made of the fact that monetary targeting provides a benchmark for private-sector planning purposes. Targeting not only signals future policy but, by the very nature of a monetary rule, signals the intention to control inflation over some future period. Whether alternative strategies are able to provide some guarantee of controlling future inflation will also be considered in the evaluation that follows.

Since the influence of monetary policy on the economy is subject to long and variable lags, a policy of fine tuning on the monetary front could well be destabilizing. One of the features claimed for a monetary rule is that it is, in principle, the antithesis of fine tuning -- it sets in place a regime that, on average, will contribute to the unwinding of inflation. It is possible to take this point somewhat further. A monetary rule also has the desirable property that, if

the exogenous shocks emanate from the demand side, it will act as a stabilizing force. To see this, suppose nominal income is growing much faster than expected or desired. In the face of a given monetary target, the resulting rise in the demand for money will force interest rates up, which in turn will put downward pressure on the growth of nominal income. In that sense a monetary rule can claim to combine appropriate short-run properties as well as a stable longer-term planning horizon for the private sector.

However, it is easy to carry this notion too far. Much of the analysis so far reveals that, during the 1975-82 period, what was required was a discretionary or fine-tuning approach to the monetary rule itself. Moreover, it is not obvious that a monetary rule is desirable when the exogenous shocks are on the supply side, that is, when they are stagflationary, and embody a downward shock on the real side combined with an upward shock on the price and cost side. This was in fact the nature of the two increases in world energy prices. To the extent that the short-term result is rising nominal income but falling real income, strict adherence to a monetary rule would again cause interest rates to increase. The result this time, however, would be to exacerbate the decline in real output. The appropriate response to a once-and-for-all price shock is to have the money supply also increase in a once-and-for-all manner, with no change in the target growth rates. But this is much like fine-tuning.

In general, if one believes, as I do, that the structure of the economy is so complex that fine tuning is as likely to be destabilizing as stabilizing, then there is something to be gained by pursuing a monetary strategy that eschews fine tuning. However, while monetary targeting avoids fine tuning in principle,

practice may well be different. Thus, if one wants to argue against alternative monetary strategies on the basis of their discretionary nature, the argument ought to be couched more in terms of degree than substance.

Two final comments on monetary targeting are pertinent. One desirable property of a policy indicator is that it be under the control of the monetary authority. On that ground alone one would favor the monetary base over an aggregate like M1, since the former is composed solely of the Bank of Canada's liabilities and, hence, is under its complete control. Extended to other potential policy indicators, the relevant question is the degree of control the Bank can have over the designated indicator. How great a problem is it if potential targets, like exchange rates and interest rates, are influenced by factors beyond the central bank's control? Finally, a change in the policy indicator should signify an unequivocal change in policy. For example, virtually all economists would agree that a doubling in the rate of money growth signals a move toward a expansionary monetary policy. However, a reduction in nominal interest rates may not signify a more toward policy ease if, over the same period, the rate of inflation declines even faster, because real interest rates will now be higher than before.

ALTERNATIVE MONETARY POLICY STRATEGIES

From the record:

> [The fact that we have abandoned targeting] does not mean ... that we are helpless in these matters. After all, the history of central banking goes back a long way, and monetary targets have been used for only the last five or six years in this country.[7]

What are the alternatives to monetary targeting? To that question I now turn.

Nominal-Interest-Rate Targeting

This approach would have the Bank of Canada calibrating monetary policy with an eye toward generating some "ideal" interest rate at each point in time. In my view this approach is seriously flawed. The history of central banking is full of instances of interest rate targeting, and it has proved in general to have a significant inflationary bias. Under nominal-interest-rate targeting, which is often referred to as "leaning against the wind," the Bank gives up all control over the money supply; its growth will be determined by the public's demand for money. Two problems are likely to result from such a strategy. First, nominal interest rates generally follow a procyclical path, rising in periods of heightened economic activity and declining in periods of slow growth. Thus, interest rate calibration runs the risk of accentuating the swings in nominal income and inflation because the monetary authority will usually find itself in a position of setting lower <u>real</u> interest rates in boom times and the reverse. A second problem is that such a strategy tends to <u>politicize</u> interest rates. As a result they become much less amenable to change, even though circumstances may demand such change. In this context it is instructive to recall that the U.S. Federal Reserve opted in 1979 for reserve-base control of its monetary aggregate rather than interest rate control, in large measure because the inertia associated with interest rate control was tending to exacerbate inflation tendencies.[8] And this change in operating procedure relates to a strategy of monetary targeting where interest rate changes could be rationalized in terms of money growth. In a straight nominal-interest-rate strategy, where there is no equivalent crutch, the problem is magnified.

A variant of an interest rate strategy that has recently found favor in some quarters is to calibrate policy so as to generate deliberately low nominal interest rates. Needless to say, the implications of this approach are even more troublesome. Such a practice may temporarily stave off a real-side downturn, but the upside risk is that this is precisely the sort of situation that can cause an explosive upward spiralling in money and prices.

In general, then, despite the fact that the Bank will often find itself taking a postion with respect to the appropriate levels of interest rates, a meaningful strategy has to rely on a broader range of indicators than simply some notion of what the "ideal" interest rate ought to be.

Real-Interest-Rate Targeting

A more reasonable strategy is to chart monetary policy in such a way as to realize some desired real rate of interest. This approach has been recommended by several policy analysts in recent months. In principle, the approach here would be to set the real interest rate equal to, or in some desired relation to, the marginal productivity of capital. Unfortunately the latter is not identifiable. Nor for that matter is the real interest rate, which is defined as the nominal, or market, rate of interest minus the expected rate of inflation. But there is no data series available that captures the expected rate of inflation. In practice, one frequently substitutes the actual rate of inflation over some recent period as a proxy for the expected inflation rate. Thus, the operational principle of a real-rate strategy would be to set nominal interest rates a few percentage points, say 3 percent,

above the rate of inflation.

What are the implications of a monetary policy that ensured a real rate of, say 3 percent? First of all, there is no question that in the early 1970s and during 1977-78 (both of which were periods when real interest rates were allowed to become negative), such a strategy would have been much preferable to the actual monetary policy.

From an analytical standpoint, however, there are several problems with a real-interest-rate policy. Suppose the marginal productivity of capital suddenly rises. By maintaining an unchanged real interest rate under these circumstances, the Bank could generate a cumulative expansion in money and prices. The situation is similar when the expected rate of inflation is rising (and is, therefore, higher than the actual inflation rate). Thus what might appear to be a constant real interest rate will really be a declining or negative real rate, and this too could set off a credit explosion. Both of these problems are related to the fact that the Bank, in following such a policy, would not be restraining any nominal quantity (such as M1 or the reserve base). Hence there is, in principle, nothing to prevent both nominal and real interest rates from escalating. A nominal rate of 8 percent when the rate of inflation is 5 percent and a nominal rate of 21 percent when the inflation rate is 18 percent both embody a real rate of 3 percent. Even though the idea behind real-interest-rate targeting is to fix a value for the real interest rate, the mechanism for doing so is to set the nominal rate. And, as with the previous strategy, this leaves the supply of money to be determined by the public's demand for it. Any tendency toward destabilizing monetary action is intensified by the fact that the link from money to prices is both lengthy and variable.

One way of avoiding some of those problems would be to follow a rule that encompassed a variable real rate of interest -- the higher (or lower) the inflation rate, the higher (or lower) the real rate of interest. In principle, this is not much different from targeting on the inflation rate; that is, the nominal rate of interest would exceed the actual rate of inflation by an amount that moved in tandem with the actual inflation rate.

In general, then, real-interest-rate targeting is feasible and, indeed, would have averted some of the monetary blunders of the 1970s. However, there is nothing inherent in this system, as there is with monetary targeting, to guarantee against cumulative error, for there is nothing that ties down the rate of inflation over the medium and longer term. Moreover, real-interest-rate targeting, like nominal-interest-rate targeting, would tend to politicize both the CPI and the nominal interest rate in a manner that might impart an inflationary bias.

Nonetheless, since the real interest rate is what drives the real side of the economy, it is a very valuable indicator of monetary policy. Even under monetary targeting, a central banker would be foolhardy not to pay some attention to real interest rates. They can offer a useful check against the possibility that the monetary targets are generating spurious information. Likewise, if one were to adopt real-interest-rate targeting, it would be equally foolhardy not to monitor the money-growth figures in order to ensure that real-rate targeting is not generating cumulative error.

An Exchange Rate Strategy

In general, an exchange rate strategy is to be preferred if one believes that world monetary policy is

likely to be more appropriate than one's own monetary policy. (For all intents and purposes one can, when discussing Canada, replace "world monetary policy" with "American monetary policy.") Pegging the exchange rate necessarily implies that, over some medium horizon, Canadian growth rates for nominal variables such as wages and prices will follow U.S. growth rates, with some correction allowed for differences in industrial mix between the two countries. Provided the United States is on the right monetary course, an exchange rate strategy may well be desirable for Canada.

There is one other advantage of an exchange rate strategy. If the Bank of Canada can convince both the government and the people that disaster will befall a depreciating exchange rate, the Bank will have substantial leverage in implementing policies that might otherwise be unpalatable. To paraphrase the Governor's earlier remark, it gives the Bank a place to stand for rationalizing and defending its policies.[9]

There are, of course, also some potentially severe costs associated with such a strategy. Pegging an exchange rate is essentially equivalent to pegging interest rates in the sense that the Bank of Canada has to live with whatever money supply the public wishes to hold at the existing exchange rate. The discussion above of the advantages of exchange rate fixing implicitly assumed that the chosen exchange rate was the then-prevailing equilibrium rate. Suppose, however, that the monetary authorities attempt to peg the value of the dollar well below its equilibrium rate. The only way to keep it from appreciating will be to allow the domestic money supply to balloon, which in turn will generate increases in domestic wages and prices. Indeed, this process may well become highly inflation-

ary and, as a result, the authorities may not even be able to prevent an eventual depreciation of the dollar if the inflationary tendencies become entrenched, which is one interpretation of what occurred over the 1971-75 period.

A variable exchange rate strategy -- the monetary authority attempting to pick the appropriate exchange rate each year -- is likely to lead to even more problems. Once the public realizes that a given exchange target is likely to be temporary, its actions and those of foreigners as well, in anticipation of an expected change in the rate, are likely to prove very disruptive.

More generally, any given exchange rate policy may imply tight or easy money depending on U.S. monetary policy. Hence, if the purpose of such a strategy is to aid in exerting internal monetary discipline, the monetary authorities must be ready to remove the exchange rate link whenever the Americans are moving into a period of easy money. The mistake made by many western industrialized nations in the late 1960s and early 1970s was to keep their currencies tied to the U.S. dollar for too long and as a result to internalize the American inflation.

A Real Output or Employment Target

Since the ultimate goal of any policy, monetary policy included, is presumably to facilitate the maximum long-term growth in real income and employment, why not short-circuit the whole process by targeting monetary policy directly on some real variable, such as the unemployment rate or the real growth in output or the gap between actual GNP and potential GNP? The operating principle might then be to follow an easy monetary policy course when the unemployment rate is above some

target level and to pursue a policy of tight money when the unemployment rate dips below the desired target. Appealing as this strategy may appear on the surface, it is fraught with danger. For one thing, the "natural rate" of unemployment is not only unobservable but is a result of a great many influences other than monetary policy. Failure to identify this rate correctly could easily send the economy spiralling off in an inflationary or deflationary direction. Indeed, this is one interpretation of the monetary expansion in the early 1970s. With the advent of such things as more generous unemployment insurance benefits, the equilibrium, or natural, unemployment rate for the economy rose. However, monetary policy attempted to bring the unemployment rate down to its previous equilibrium rate and in the process set off a veritable money and credit explosion and an upward spiralling of prices.

From an institutional or political standpoint, such a policy strategy would place the Bank in a most uncomfortable position vis-à-vis the government in general, and the Department of Finance in particular, for the Bank in effect would have to state publicly what the unemployment rate should be at any particular time. Finally, as with some of the other alternatives, there is nothing inherent in this approach that would restrain the rate of inflation over any future period. As is reasonably well documented in academic circles, the natural rate of unemployment is consistent with a wide range of inflation rates.

None of this is meant to suggest that monetary policy should be indifferent to the rate of unemployment or the gap between actual and potential GNP. Rather, it suggests that calibrating monetary policy solely in terms of some particular value of the unemployment rate may well lead to serious problems.

Targeting on Nominal GNP

Since monetary targeting can be viewed as a means of influencing the growth of nominal GNP, why not target directly on nominal GNP? This approach, too, has some support in academic and policy circles. However, it has one major strike against it. The delays in producing nominal GNP data are substantial, for the figures come out only quarterly and then with a lag. Since it would probably take at least two quarters of observations to ascertain that a shift in nominal income was taking place, monetary policy could be off course for prolonged periods, the effect of which might well be to exacerbate any cycles in nominal income. Indeed, it is this lag that is part of the argument for using money as a target: the current money data in relation to the target should give the central bank an early indication of where nominal income is going and, therefore, allow it to make corrections now and not two or three quarters hence. As national income data become available more quickly and more frequently, this problem will diminish.

Like money-supply targeting, a nominal-income strategy should tie down the inflation rate over the medium term, even if the policy leads to a greater amplitude in the cycle of nominal GNP.

Appropriate Credit Conditions

Before monetary targeting was introduced in 1975, the central bank's prevailing paradigm was to conduct monetary policy in a manner such as to generate "appropriate credit conditions." Incorporated in this concept was the notion of both a desirable level for the "cost of credit" (which was to be influenced by manipulating the prevailing level of interest rates) and a desirable level for the availability of credit (which

was to be influenced by manipulating the chartered banks' liquidity position). This nebulous conception of policy formation worked to some extent in the mid-1960s when the combination of inflation inertia in the system and the imperfections in the markets for credit provided a receptive environment. The first book in this series was analysis of this approach and why it was out of tune with the realities of the 1970s (let alone the 1980s) and, indeed, why and how it contributed to the inflation that is with us yet.[10]

Summary

There are, of course, other strategies that could be examined. However, the above list covers the principal range of alternatives to monetary targeting. In summary, several points should be noted. First, it is probable that all the above strategies could be made to work, at least for a time, if they were buttressed by other policy measures. For example, pegging the exchange rate at an unreasonably low level might be manageable for a period if there were a comprehensive system of exchange controls. Likewise a comprehensive set of income policies might make a low-interest strategy workable for a while. I ignored these considerations in the above analysis in large measure because they are, at best, emergency measures and ought not, in my opinion, to be part of "normal" operating procedures. Second, the most likely strategy that a monetary authority would adopt in the absence of a monetary target is some combination of the above strategies. Moreover, from a purely theoretical vantage point, it can be demonstrated that a money-supply-target regime in an open economy is inferior to a monetary strategy that focuses simultaneously on such things as interest rates and exchange rates.[11] From a practical vantage point, how-

ever, the critical questions still remain: Has the monetary authority sufficient foresight and knowledge of the workings of the economy to be able to engage in this degree of fine tuning without destabilizing the system? Will this eclectic approach provide any longer-term assurance to the public about the future pace of inflation? That brings me to the third and last point. While the Bank may have temporarily abandoned its monetary targets, it is still publishing data on various monetary aggregates. Moreover, the principle that no sustained inflation can occur without a corresponding increase in the money supply is well accepted, even by those who are not in favor of monetary targets as a strategy for charting shorter-term policy. Thus, even under an alternative strategy, the public (and I suspect the Bank as well) will be keeping a close eye on the rate of growth of the various definitions for money. Rapid increases in these aggregates will signal an alternative error, as it were, in the strategy and will trigger corrective action of some sort or another. The targets may be gone, but the precepts of monetarism are still alive.

THE BANK'S RECENT STANCE

With this background, it is instructive to attempt an interpretation of the Bank of Canada's policy stance since mid-1981. One interpretation that immediately springs to mind is that the Bank has adopted exchange rate targeting. As the above analysis indicates, if we peg our exchange rate to the U.S. dollar we will in effect become the Thirteenth Federal Reserve District. Our wage and price inflation will eventually fall into line with that in the United States, and so will our nominal and real interest rates. Another way of put-

ting it is to say that the Bank of Canada has abandoned the Canadian monetary targets and adopted the U.S. monetary targets. The problem with this interpretation is that the exchange rate has been quite volatile over this period. Even granting that many of the movements in the exchange rate were beyond the Bank's immediate control, the authorities could have smoothed out much of this movement if they had so desired. Hence, the Bank is not pursuing a "pure" exchange rate strategy.

A more complex, and probably more accurate, interpretation is that the Bank is following a mixed or eclectic approach with principal emphasis on the exchange rate and the rate of inflation. The exchange rate component is clearly visible, and it becomes preeminent whenever there is severe downward pressure on the dollar. But given that the Canadian rate of inflation exceeds that in the United States, maintaining the exchange rate at or near its present level requires that nominal interest rates in Canada exceed those in the United States. To the extent that the inflation rate differential equals the interest rate differential, the policy can be viewed as ensuring that the real rates of interest in the two countries are equivalent. This is not quite the same as the real-interest-rate strategy referred to in the previous section, since the Bank is not picking some arbitrary figure, like 3 percent, for the desired real rate. Rather it is accepting the American real interest rate. As was also elaborated above, one possible problem with a pure real-interest-rate strategy is that there is nothing to prevent the underlying rate of inflation from escalating. This problem does not arise here, because the exchange rate component of the package serves to keep the longer-term inflation rate in line with the U.S. rate, which in turn is controlled by the U.S. money targets. If our

own inflation rate begins to fall in relation to the U.S. rate, our nominal interest rates will fall apace.

Even this interpretation is somewhat out of step with the facts, because on occasion our real interest rate is below that in the United States. What is probably occurring is that the Bank of Canada is using any window of leeway on the exchange-rate front to cater somewhat to the real-side needs of the economy.

That, then, is my interpretation of what the Bank is doing in terms of the various alternative monetary strategies outlined above. It is reasonably close to what the Governor himself has said that the Bank is doing, (in a reply to a question from Senator Roblin):

> Senator Roblin:
>
> It is suggested in some quarters that the rate of exchange has really been the dominating factor in your policy with respect to interest rates, the weekly auction and the bidding of the bank in that auction market to keep the price of money from falling too fast in Canada.... Does that estimate of the situation have any weight?
>
> Mr. Bouey:
>
> I do not think that you are far off, but we are not following a fixed exchange rate policy. We are not trying to do that. We do feel that, under the present circumstances, it would not be appropriate to try to force interest rates down and not care about what happened to the exchange rate. Certainly we are watching the exchange rate, but we are also watching the rate of inflation. I think that, at the present time, the rate of inflation and the exchange rate are close to the top of the list.[12]

CONCLUSION

In the fall of 1975 the Bank of Canada mounted an attack on inflation. The theoretical underpinning of the policy was the monetarist approach to combating

inflation. The approach to implementation that the Bank adopted has come to be known as monetary gradualism, the cornerstone of which was M1 targeting. The experience with targeting over the 1975-82 period did not prove to be as successful as many of us had expected or indeed as the Bank might have preferred. As was documented in considerable detail above, there were several technical reasons for this. And, in my opinion, there were theoretical reasons as well. However, it is also important not to lose sight of the fact that inflation is now being brought under control. Even though the real-side costs have been much higher than they needed to be, the 1975 goal of unwinding inflation is finally within sight.

Be that as it may, M1 targeting has now been abandoned. In one important sense, the overall policy stance has not changed much: the anti-inflation fight continues. To the extent that the dropping of the targets represents a policy shift, the shift occurred in mid-1981, when the Bank in effect jettisoned M1 targeting and adopted a policy of monetary abruptness, and not in November 1982, when it officially abandoned targeting. Indeed, contrary to what might be expected, the abandonment of the targets has coincided with more restrictive monetary policy and not with a move to policy ease. This was true in 1978 (at least initially), when the Bank began to place increasing emphasis on the exchange rate, and it was certainly true for the 1981 monetary crunch.

Paradoxically, perhaps, the use of the targets was steering Bank policy in the direction of monetary ease. As indicated above, this occurred in large measure because the Bank failed to adjust the M1 targets in accordance with the many technological and financial innovations that were reducing the public's demand for

money. I believe it also occurred because the Bank had, from the beginning, relied entirely on a definition of money that was too narrow. In any event, by using the exchange rate as an interim target, the Bank has been able to exert more monetary discipline on the country than it could have otherwise. My explanation for this shift in targets and the move toward stringency is that the Bank suddenly realized that the rate of inflation in Canada was becoming disturbingly offside relative to inflationary conditions south of the border. I would even go as far as to suggest that this new policy put even more pressure on the government to fall into line in the battle against inflation. When the word is finally out, I would not be surprised to find that this pressure had played a role in the formulation of the "six and five" policy.

Because of the nature of my analysis, I have devoted considerable attention to the myriad of problems that can beset monetary targeting. In comparison, the brief evaluation of alternative strategies might seem to suggest that they are subject to far fewer problems. That was not my intention, nor is it likely to be true. Consider exchange rate targeting once again. Suppose the initial setting represented an equilibrium rate. Because of the different economic structures of the U.S. and Canadian economies, a change, say, in the prices of resource products would change the equilibrium exchange rate. The authorities would have to alter their exchange setting accordingly. But this would require knowledge and foresight that not even they possess. More generally, what should the response be to a tendency for the exchange rate to rise? The answer is that it depends on why the rate is rising. If it is because our exports are booming, then a policy of holding the rate would lead to internal inflationary

pressures. If it is because of an unexpected capital inflow, it is more appropriate to hold the rate, since an appreciation would dampen the growth of exports. The list of potential problems could be extended for exchange rate targeting and the other alternative strategies as well. The point is to gain perspective and to recognize that a large portion of this study was intentionally devoted to the problems associated with the recent experience of monetary targeting.

Where to from Here?

First of all, I do not foresee M1 being resurrected as a monetary target. Increasingly, checkable deposits are falling outside the current definition of M1. This is true for households and corporations alike. Moreover, resurrecting monetary targeting with a broader monetary aggregate -- which I would prefer -- will depend, to some degree at least, on the Bank's willingness to alter its monetary control mechanism. For the near term, I am not very optimistic on this score, either.

Assuming, then, that monetary targeting is not in the cards, what should the Bank do? Above all, the anti-inflation fight must continue. We have struggled for too long to give up the battle now, particularly since most of the enormous costs of the policy are either behind us or would not be significantly reduced by a change of policy at this time. Moreover, success is clearly in sight -- monetary policy <u>can</u> control inflation. Even though one might argue, as I have done, that the 1975-82 policy could have been conducted with fewer real-side costs, it is important to recognize that monetary policy is well within reach of achieving its objective of lowering inflation and

inflationary expectations. And despite their abandonment, monetary targets were a critical component of the overall policy.

As for the appropriate monetary strategy, it seems to me that an eclectic approach is unavoidable as we attempt to convert the present falling inflation rates to low and more stable longer-term rates. To concentrate on the real interest rate and allow nominal rates to fall apace with the decline in inflation, as I perceive that the Bank is doing, seems entirely appropriate. Indeed, since the expected inflation rate is probably less than the reported annual rate (as is usually the case when inflation is falling), the Bank has some leeway to lower the gap between nominal rates and the annual inflation rate in order to provide more relief to the real side of the economy. During this transition, the Bank should probably ensure that there is no marked depreciation that might undo the gains made against inflation.

Over the medium term, charting monetary policy will likely be more problematical. However, there are several encouraging signs. First of all, Canadians are probably now convinced (or they certainly ought to be!) that the Bank is fully committed to its anti-inflation policy. Second -- and this point is related -- inflationary expectations are probably at their lowest in years. This may give the Bank some valuable leeway in charting policy. Finally, one can hope that the federal government has learned that it is essential to ensure that the Bank is not left alone in the inflation fight. Thus one can reasonably expect that in future the public will receive more consistent messages from our economic managers.

The principal challenge for the monetary authorities will be to prevent a resurgence of inflation as

the recovery gathers strength. It is then that an excessive concentration on the exchange rate can lead to problems. The Americans appear to be easing up substantially on the monetary front. Suppose that they continue to do so. What will Canada do? Do we hold to the exchange rate and incorporate internally any resurgence in U.S. inflation, or do we hold to our inflation plan and allow the exchange rate to drift upward? It is precisely in situations like this that the public is still at sea about what the monetary and fiscal authorities are likely to do. Phrased differently, it is precisely over this medium term that a policy of monetary targeting can provide a valuable benchmark for both the public and the Bank.

A second set of problems can arise from the manner in which the Bank chooses to implement its policy. I would assume that some version of variable real-interest-rate targeting is the preferred option. Under such a strategy -- actually under any strategy -- it is imperative for the Bank to ensure that it is not building cumulative error into the formulation of policy.

For both these reasons, it should be apparent that the Bank has to pay considerable attention to what is happening to money growth. As expressed above, my preference would be to reinstate monetary targeting based on an aggregate that incorporated all transactions balances. But even without formal monetary targeting, what happens to the money supply must be a component of any monetary strategy. It is precisely when the formulation of monetary policy faces the most challenges -- volatile international capital markets, exogenous price shocks, rising international inflation, and so on -- that the path of money growth provides an invaluable indicator of current policy. It seems to me that the message that should be conveyed to the public

is the following: that, although the targets are gone, the Bank will nonetheless closely monitor the rates of growth of various monetary aggregates and, indeed, take them into account in its overall strategy. If the Bank does not accept this approach, then the public, and perhaps the Bank as well, may find that, in terms of the longer-term inflationary prospects, monetary policy indeed has no place to stand.

Notes

CHAPTER 1. INTRODUCTION

1. Bank of Canada, Annual Report, 1981, p. 31.
2. Gerald K. Bouey, "Monetary Policy -- Finding a Place to Stand," The 1982 Per Jacobsson Lecture, Toronto, September 5, 1982, reprinted in Bank of Canada Review, September 1982, p. 16. As the reader will have recognized, the title of this monograph derives from the last statement of this quotation and from the title of the Per Jacobsson Lecture itself.
3. Gerald K. Bouey, "Recovery from Inflation," notes for remarks to The Canadian Club, Toronto, November 29, 1982, reprinted in Bank of Canada Review, December 1982, p. 7.
4. Thomas J. Courchene, Money, Inflation, and the Bank of Canada: An Analysis of Canadian Monetary Policy from 1970 to Early 1975 (Montreal: C.D. Howe Research Institute, 1976), p. 278.

CHAPTER 2. THE POLICY RECORD: 1981-82

1. Thomas J. Courchene, Money, Inflation, and the Bank of Canada, Volume II: An Analysis of Monetary Gradualism 1975-80 (Montreal and Calgary: C.D. Howe Institute, 1981).
2. Bank of Canada, "Press Release," (associated with the lowering of the target range), February 13, 1981, reprinted in Bank of Canada Review, February 1981, 3-4.
3. Bank of Canada, Annual Report, 1980, p. 12.
4. Ibid., p. 13.
5. Courchene, op. cit., p. 206.
6. Parts of this section draw upon my paper "Recent Canadian Monetary Policy, 1975-81: Reflections of a Monetary Gradualist," prepared for the University of Manitoba's Institute of Social and Economic Research, forthcoming in a conference volume edited by Greg Mason.
7. The upward blip in M1 in mid-year was the result of a postal strike, the impact of which (on the basis of considerable recent experience!) is always a temporary ballooning of M1 deposits.
8. "The Bank of Canada decided in the spring of 1978 to give increasing weight in the conduct of monetary policy to cushioning the rate of decline in Canada's exchange rate," Bank of Canada, Annual Report, 1978, p. 7.
9. There may be another reason as well -- because the Bank failed to adjust the M1 target range for the shifts in the M1 demand function, it was not a useful guide for monetary policy. See Chapter 3 for elaboration of this point.
10. Courchene, op.cit., Table 1. It should be pointed out that if the Americans calculated their CPI the way we do, the escalation in their rates would have been less pronounced.

11. Bank of Canada, Annual Report, 1980, p. 15.

CHAPTER 3. ABANDONING THE TARGETS: WHAT WENT WRONG WITH M1

1. Gerald K. Bouey, "Remarks," to the 46th Annual Meeting of the Canadian Chamber of Commerce, Saskatoon, September 22, 1975, reprinted in Bank of Canada Review, October 1975, p. 24.
2. Bank of Canada, Annual Report, 1980, p. 15.
3. Stability of the demand function is defined not in terms of a fixed number, but rather in the sense of a predictable relationship in terms of a few variables such as interest rates and nominal GNP itself.
4. Bank of Canada, Annual Report, 1975, p. 15.
5. Since the purpose of this section and more generally this chapter is to describe the Bank's targeting procedures and the difficulties that eventually led to their abandonment, the Bank's choice of M1 and an interest rate mechanism is, for present purposes, not contested, even though in all of the previous books in this series I have argued for a broader definition of money and a reserve-base control mechanism. For example, it is not necesary for the public's demand for the chosen monetary aggregate to be related to short-term interest rates. Indeed, as will be pointed out later in the chapter, this interest-sensitivity of M1 has led to problems.
6. Bank of Canada, op. cit., p. 10.
7. This is not as haphazard as it may at first appear. For example, the Bank would not want to announce a target range and then find that its current interest rate setting was wildly different from that which would generate the desired M1 path. For this reason the target ranges are usually announced retroactively; for example, if the new target range is announced in November, it will be anchored so, say, the monthly value for June or to a three-month M1 average centered on June. Not surprisingly, the anchors for the new ranges are carefully chosen, but they have also been technically consistent with the overall intent of the policy.
8. Bank of Canada, Annual Report, 1976, p. 22.
9. R.W. Lawson, Deputy Governor of the Bank of Canada, "Remarks" to the Montreal Society of Financial Analysts, March 31, 1976, reprinted in Bank of Canada Review, April 1976, p. 21.
10. Bank of Canada, Annual Report, 1975, p. 19.
11. Gerald K. Bouey, "Statement" before the Standing Senate Committee on National Finance, December 8, 1982, reprinted in Bank of Canada Review, December 1982, p. 14.
12. Ibid., p. 13.
13. The analysis in this section follows the framework set out in a forthcoming paper by Charles Freedman, Chief, Department of Monetary and Financial Analysis, Bank of Canada, "Financial Innovation in Canada: Causes and Consequences," American Economic Review (May 1983). However, as noted above, the description of the various financial innovations and their implications are also to be found in previous books in this series.

14. Bank of Canada, Annual Report, 1981, p. 31.
15. Courchene, Money, Inflation, and the Bank of Canada: Volume II: ..., op. cit., Chapters 7 and 9.
16. Freedman, op. cit.
17. Thomas J. Courchene, The Strategy of Gradualism: An Analysis of Bank of Canada Policy from Mid-1975 to Mid-1977 (Montreal: C.D. Howe Research Institute, 1977), p. 106.
18. Bank of Canada, Annual Report, 1976, p. 23.
19. Gordon G. Thiessen, "The Canadian Experience with Monetary Targeting," paper presented to the International Conference on Monetary Targeting, sponsored by the Federal Reserve Bank of New York, May 1982.
20. Freedman, op. cit.
21. The first three of these options are adopted from Freedman, op. cit.
22. It is important to note that one can also take the opposite view of the target range -- that it provides the monetary authority with "license" rather than leeway. Consider the 4-8 percent target range -- the difference between the upper and lower bounds represents a doubling in the rate of monetary growth. Alternatively, suppose M1 is at the bottom of the range. Over a three-month period M1 could expand at an annual rate of 27.5 percent and not burst through the upper boundary of the range. Over a six-month period the annual rate of M1 growth would have to exceed 18 percent before it broke through the upper band. These are tremendous growth rates, particularly for a target range setting of 4-8 percent, so that there is some truth to the statement that the existence of the band is a mixed blessing.
23. Henry C. Wallich, "The U.S. Economy Over the Next Five Years," summary of remarks presented at the Annual Meeting of the American Economic Association, New York, December 29, 1982, p. 5.
24. Ibid., p. 5. It should be noted that the Americans currently have target ranges for more than one aggregate, so that a shift of emphasis to a broader aggregate is correspondingly easier than it would be in Canada, where target ranges are (or were) only applied to M1.
25. Gerald K. Bouey, "Recovering from Inflation," notes for remarks to The Canadian Club, Toronto, November 29, 1982, reprinted in Bank of Canada Review, December 1982, p. 7.
26. One of the reasons that the Americans adopted base control in 1979 was precisely that interest rate control caused too much inertia in interest rate movements, in part because the process tended to politicize interest rate movements. As a result the movement in monetary aggregates tended to follow a procyclical pattern and, therefore, exacerbate any tendency for prices to increase. See Henry Wallich, "Techniques of Monetary Policy," remarks to a Meeting of the Missouri Valley Economic Association, Memphis, Tennessee, March 1, 1980.
27. Courchene, Money, Inflation, and the Bank of Canada, Volume II: ..., op. cit., 169-75.

28. Indeed, over the past several years, the interest rates on these deposits have not only moved in tandem with the general level of short-term rates but, as well, have exhibited even greater amplitude. This led one of the Bank's researchers to argue that, in order to decrease or increase the rate of growth of a broader aggregate, one would have to lower or raise the general level of interest rates. I believe this to be quite wrong. It is extrapolating from one set of operational procedures to derive implications for an entirely different set. Under the present arrangements, there is absolutely no penalty for banks that attempt to attract extra term deposits in response to a rise in general short-term rates, since the Bank of Canada in effect automatically satisfies the chartered banks' need for reserves. Under a reserve-control mechanism, a curtailing of reserves freely available to the banks would result in banks implementing measures to restrict their deposit levels (probably by raising rates for loans relative to deposits), so that the traditional relationship of restrictive monetary policy and rising interest rates would continue.
29. Freedman, op. cit.

CHAPTER 4. MONETARY TARGETING: AN EVALUATION

1. For an analysis that argues that it was a mistake to expect that inflation would be lowered persistently and steadily with targeting, see David Laidler, "Inflation and Unemployment in an Open Economy: A Monetarist View," Canadian Public Policy 7 (Supplement, April 1981), 179-88.
2. These arguments are treated in considerably more detail in Courchene, Money, Inflation, and the Bank of Canada, Vol. II: ..., op. cit., Chapter 7.
3. There is an intriguing issue here. Given the downward shifts in the public's demand for money, one can argue that, had the targets been rebased downward to take account of these shifts, the observations for M1 in the second half of 1981 would not have been low in relation to the appropriate target range. Nonetheless, the rapid reduction of M1 to this low level in 1981 did represent a very stringent policy. This was so because the path of prices until that time was influenced by what actually occurred on the monetary front and not what might have happened if the targets had been adjusted to incorporate the downward shifts.
4. These were based on the Bank's M1 targets but adjusted to take account of the different income elasticities of the broader aggregates.
5. Obviously that is not to suggest that the government should deliberately falsify its forecasts. However, the Bank and the Department of Finance should be telling the public a consistent story. If Finance does not like the Bank's monetary policy, it has the right to issue a written directive to the Governor who, by law, must accede to the directive or resign. Incidentally, the path of nominal GNP for 1982 is in line

with the Bank's implicit projections, not those of the Department of Finance.

6. Richard Lipsey, "Why Has Canada's Inflation Rate Been So Stubborn?" Mimeo. Department of Economics, Queen's University, 1982.
7. Ibid.
8. Ibid.

CHAPTER 5. IMPLICATIONS FOR THE FUTURE

1. Gerald K. Bouey, "Evidence before the Senate Committee on National Finance," in Senate, Standing Committee on National Finance, 1st Sess., 32nd Parl., Issue No. 64, December 8, 1982, p. 64:5.
2. Ibid., p. 64:10.
3. Ibid., p. 64:10.
4. Ibid., p. 64:11.
5. Gerald K. Bouey, "Monetary Policy - Finding a Place to Stand," The Per Jacobsson Lecture, Toronto, September 5, 1982, reprinted in Bank of Canada Review, September 1982, p. 3.
6. Ibid., p. 14. As an important aside, the Governor goes on to note that the excessive reliance on monetary policy has been of some considerable concern because of the uneven impact across sectors of the unusually high interest rates. In a passage that lends support to my earlier contention that the remaining branches of overall policy were not pulling their fair share in the anti-inflation fight, he adds: "While interest rates were bound to rise appreciably in view of the upsurge of inflation, all central bankers would have preferred mixes of monetary and fiscal policies at home and abroad that would have obviated the need for such high interest rates."
7. Gerald K. Bouey, "Evidence before the Senate Committee," op. cit., p. 64:19.
8. See footnote 26, Chapter 3.
9. As a matter of interest, this was also Harry Johnson's view: "Central banks have a preference for a fixed exchange rate because it gives them power over governments; hence they are tempted both to manage a floating rate so as to stabilize it, and to try to steer it back towards fixity." ("Inflation: An International Problem," Bankers Magazine, July, 1971, p. 19. This is a reproduction of Harry Johnson's testimony before the Standing Senate Committee on National Finance, May 26, 1971.)
10. See Courchene, Money, Inflation, and the Bank of Canada: An Analysis of Canadian Monetary Policy from 1970 to Early 1975 (Montreal: C.D. Howe Research Institute, 1976).
11. See Pierre Fortin, "Monetary Targets and Monetary Policy in Canada: A Critical Assessment," Canadian Journal of Economics, 12 (November 1979), 625-46.
12. Gerald K. Bouey, "Evidence before the Senate Committee," op. cit., p. 64:9.

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